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PART FIRST.

ORIGINAL COMMUNICATIONS.

ART. I.—*A Case of Obstinate Regurgitation of the Contents of the Stomach, Treated by the Inhalation of Chloroform. With Remarks on Regurgitation.* By ISAAC E. TAYLOR, M.D., Physician to Bellevue Hospital, New York.*

SEPTEMBER 1, 1855, I was requested to visit a married lady, æt. 27 years, who had suffered from chronic vomiting for several weeks. She had just returned from Newport, R. I., where she had gone to enjoy the benefit of sea-bathing for the more complete restoration of her health, which had been delicate for the last few years, but had somewhat improved the few months previous to her going to Newport. Whilst she was at Newport, the affection of the stomach commenced. In the early part of August—I think the 6th—she had been bathing, and walked from the beach to her residence, a distance of one mile, which fatigued her very much. This, with the unpleasant information she had received by letter after her return, from a near relative, and producing some excitement of mind, was believed to be the exciting cause of the malady. When I visited her, I found her looking cheerful, and her mental energies lively as usual. No depression of spirits; there was not much, if any, emaciation since I last saw her, July 19; there was more feebleness; pulse natural; skin the same in feel and function; tongue clean and looked natural. The countenance did not present the

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appearance of any serious disease of the stomach or of the abdominal organs; appetite was good, and she enjoyed her food with some relish. The bowels were not regular, nor had they been for some time, which was the reverse of what formerly had been the case, having been subjected to a form of chronic diarrhœa for the last two or three years, at intervals. She had been married for several years; was of a leucophlegmatic temperament, and had had five or six miscarriages. A sub-acute ovaritis had existed, and which, under treatment, yielded during the spring. The diarrhœa also ceased previous to her leaving for Newport. She vomited, or rather regurgitated, her food after every meal, and whenever any fluid of the smallest quantity was taken, and seldom without something was swallowed. There was a slight burning sensation in the region of the cardiac extremity of the stomach, under the scrobiculis cordis, after she had rejected what she had taken. There was no pain on pressure over the region of the stomach; no tenderness; no enlargement was perceptible over the abdomen; no tenderness of the spine, but tenderness, the size of a quarter dollar, in the right iliac region, corresponding to the lumbo abdominal nerves in this section of the abdomen; urine natural, and no albumen; the menstrual function was normal; there was no disease of the uterus. This organ was normal in size, position, and appearance. The ovaries also the same. The food or drink was returned, with very little change, as soon as swallowed, without nausea, and without convulsive effort or change of countenance. She had not thrown off any blood; acidity sometimes was present, and more so during the first week than ever afterwards during the time I was in attendance. The contents of the stomach, provided the patient had eaten or drank a larger quantity than usual, would be regurgitated, as a general rule, mouthful by mouthful, till the whole was eliminated. Sometimes, however, it would be rejected in larger quantities at a time. It usually occupied her from a half hour to one hour and a half to reject her food and drink. Solid food was partly digested, and other times not. She had been treated homœopathically while at Newport, and also by the regular method of treatment.

From the appearance of the patient, and the manner in which the contents of the stomach were rejected, I considered it a case of regurgitation, and not vomiting, and that the malady appeared to be seated in the eighth pair of nerves, and the solar or semilunar plexus of nerves of the stomach

was incidentally involved; that the stomach was not diseased in any of its tissues at the time. I did not consider it, therefore, as merely hysterical or as sympathetic of any uterine trouble, or of any internal organ. This opinion was expressed to the family the day following. The treatment, with this view of the case, was principally by those remedies that would have an influence over that portion of the nervous system. The alkaloids were first resorted to, and then the various sedative preparations. Cannabis Indica, in the one-sixth of a grain, was of some service. McMunn's elixir of opii. in five-drop doses, with five drops of vinegar, repeated every few hours, after meals and during the time of meals. The various mild ferruginous preparations were tried; chloroform internally and with camphor; nitric acid upon the stomach; blisters alone and dressed with the alkaloids; epispastic, not only to the stomach, but to the spine; also dry cupping to the spine along the greater part of its tract; stimulating liniments of chloroform, with aconite, etc., were used. Nutritious enemas were also resorted to. In truth, everything that could be suggested, and that was deemed advisable, was made trial of. Her diet was restricted, and cream and milk, in tea-spoonful proportions, were administered every half hour. This treatment seemed to prostrate her so much that she was permitted to eat whatever she pleased, and in this manner, although the food was regurgitated, she was sustained better, and, as I believe, only in this way. Out-door exercise was resorted to as much and as often as her strength would admit of. As nothing I had suggested in the treatment of the case appeared to afford any benefit, Professor Joseph M. Smith was invited by me to visit her, six weeks after I first saw her, and two or three weeks after this visit of Prof. Smith, Dr. C. D. Smith was invited to join Prof. Smith and myself. Under the treatment then advised, the malady still continued without any change for the better.

As no favorable result had ensued by March, she was advised to make trial of a sea voyage. She bore the sailing remarkably well, so much so as to merit the appellation of being "the best sailor aboard of the ship," and improved as respects her general strength, but she was not benefited in the least whilst at sea, respecting the regurgitation, nor when she arrived at Paris. She there came under the supervision of Sir Joseph F. Olliffe, who had associated with him Professor Trousseau during the whole of the time she resided there, which was three months. She was also visited by

Prof. Rayer. The opinion of Prof. Rayer was, that it was a severe case of gastralgia. The views entertained by Sir Joseph and Professor Trousseau were—I quote from Sir Joseph's letter to me, June 18, 1856: "It is a case of obstinate regurgitation, unaccompanied with organic lesion, but, from its antecedents—the anterior uterine affection, the frequent miscarriages, and the manner of invasion of the malady, —we both were impressed with the idea that the uterus was the *point de depart* of all the mischief. We determined, accordingly, to establish a point of irritation on that organ, by applying the actual cautery, and selected the anterior labium of the cervix on which there existed a small ulceration." The treatment of these gentlemen proved of no avail, and the usual internal methods of treatment for affections of the stomach were also instituted with the like result. Hydropathy was tried, as well as electro-magnetism.

On the 8th July, the patient once more presented herself to my notice, without any change for the better. She was more emaciated, and weighed about eighty-three pounds, as was afterwards ascertained. For several days after she returned, nothing was suggested till she had recruited from the effects of her sea voyage, and, on the 17th July, after a slight breakfast consisting of toast and tea, and as soon as she had swallowed it, and before it was regurgitated, she was brought under the partial influence of chloroform, and as she did not reject her food after fifteen minutes, the inhalation was continued for one and a quarter hours, and during that time no regurgitation occurred. There was, while under the effects of the chloroform, considerable uneasiness and distress in the stomach, which was perceptible from the moaning of the patient and the vermicular motions of the stomach, while the food was undergoing the process of digestion. Fifteen to twenty minutes after the chloroform had been given, she regurgitated part of her food, and continued to do so from three quarters to one hour, but not to the same extent as previously. After the trial of chloroform that day, she did not appear much feebler than before it was taken. Her food, July 17, was of a light nature and smaller in quantity than she had usually partaken of; it was rejected, but not as soon or as much. The following day, July 18, she was allowed to remain quiet with the same light nourishment as the day before. On Saturday, July 19, at half-past two, P.M., directly after she had eaten her dinner of beefsteak, tomatoes, potatoes, bread, and some brandy

and water, the chloroform was administered, and continued till four, P.M., one hour and a half, and to the same extent of partial anæsthesia as before. No regurgitation occurred till half-past four, P.M., and then it was at long intervals and in mouthfuls, and nothing like the quantity she had eaten. The distress, judging from the moaning of the patient, and the writhing motions of the body, was more severe, and the attempt to regurgitate more evident. This, I presume, was owing to the larger quantity of food she had eaten and of a more solid nature than before. In the disgorging of the food there was some acidity. No food that evening was allowed till next morning, July 20, when the light food she had taken for her breakfast was not cast off as soon or as much; and, during the afternoon, after another light meal for dinner, the same thing recurred, but to a partial extent. At eight, P.M., she was much enfeebled, but this was attributed to her not having partaken of the usual quantity of food she had been accustomed to, and some brandy and water was advised in small doses. At ten, P.M., there was a little regurgitation with some acidity. Ord. mixture composed of spts. ammonia comp. bi-carb. potass., nit. potass., and hydrocyanic acid in solution, and three table-spoonfuls of this mixture were given. The medicine in this quantity was retained. In one hour afterwards, as there was some nausea, it was given again and retained—a symptom in the treatment of the case which was very gratifying to perceive, for so large a quantity had not been retained as long before since she was taken sick; and although I had, during the evening, my suspicions awakened to the possibility of her improvement, I felt at this time stronger encouragement to believe my patient was in a fair way of recovery. One hour after the last dose, as my patient had not slept during the day, and but little the evening previous, I gave her a pill composed of Indian hemp $\frac{1}{4}$ gr. and watery ext. of opium, one gr. and one hour after this, a second. After a short interval of time, as she appeared inclined to sleep, I left her till half-past seven, A.M., directing that some chicken-iced jelly should be carefully and nicely prepared, which was given in tea-spoonful quantities every half hour for three hours, to be again resumed in three hours; this quantity in such a given time was continued till the next day, and then it was given in dessert-spoonful quantities with tea-spoonful doses of brandy and water. The third day, July 23, the nourishment was increased to table-spoonful proportions, every ten or fifteen minutes, till a sufficient quantity

of food was taken, and with a gradual increase of other kinds of food, and under the general advice and directions given, she improved so much as to be able to leave for Lebanon Springs, August 6, and continued to improve during a sojourn of four weeks, in the mountain region, so as to gain fifteen pounds during that time, and she is at this time enjoying as good health, as previously; nor has any further evidence of the malady manifested itself from the time it ceased, July 20, to the present moment.

Remarks.—The case of regurgitation of the contents of the stomach, as related, and which is considered as a peculiar morbid affection of that viscus, suggests a few remarks on the subject of regurgitation. In the various treatises on the practice of medicine, this form of affection of the stomach is not alluded to. Affections of this nature are usually embraced and considered as cases of vomiting, the stomach having the appearance of, and therefore believed to be, the principal seat of the disease. I think, however, it will be ascertained, on more mature reflection, and the investigation of cases of this character, that the disease is differently located. It is a conceded point that there may be different antiperistaltic actions to which the alimentary canal, from the pharynx to the small intestines is subjected. Rumination claims the first notice. Regurgitation is next presented to our observation, then vomiting, and, if carried further down the intestinal tract, ileus. The first two will more especially invite our attention. Rumination, we are aware, is generally allied to the animal kingdom, as well as regurgitation, and it might seem singular that the natural process of some of the animal creation might or could occur in the human species, and be recognized as one of disease. Nevertheless, such appears to be the fact, as instances of this nature do occasionally present themselves to the experience of professional men, not only in affections of the stomach, but in other parts of the human organization—the nervous system especially. By rumination we understand the act or process by which a part of the food, after it is taken, rises into to the pharynx, after a longer or shorter interval of time, varying from a few minutes to several hours.

Fluids are more easily thrown up than solids, and vegetable than animal matter. There is no nausea nor offensive taste perceptible, and after the substances have been retained for a time in the mouth, they are again swallowed, when another portion rises, and this is repeated more or less fre-

quently in a period of time varying from a few minutes to one or two hours. The act, however, is not generally the actual rumination of the cloven footed animals.

In the instance of a young gentleman, who has lately presented himself to my observation, this function has existed for nearly a year, but it is only in the morning after breakfast, and not during any other meal. Portions of the food he has partaken of will be returned to the mouth and then swallowed. It is sometimes thrown off or rather regurgitated. His health, in other respects, appears to be generally good. He is engaged as a clerk in business, and frequently, through the hurry or press of business, eats with rapidity, or, in other words, bolts his food.

Sir Henry Marsh, in an article on regurgitation, in the *Dublin Quarterly Journal of Medical Science*, vol. 23, refers to the case of a young gentleman which bears pointedly on this affection. The young gentleman was a clerk in a bank, enjoyed good health, lived at his desk, took but little exercise, and dined hurriedly, scarcely allowing himself time to masticate his food. Soon after dinner portions of food, with little or no effort on his part, ascended into his mouth, were remasticated and again swallowed. In this manner, according to his own account, the whole food underwent the secondary process. It was a source of much enjoyment to him, and he prided himself upon the possession of this novel capability. Romberg, however, says he, has not found the rumination in man to be actually the same as in animals, and that the morsel thrown up is not subjected again to trituration. This corresponds with my own experience. The case of Sir Henry is nevertheless very clear and decided in this respect, showing that the normal act of the animal kingdom may, through disease in the human species, assume the same features. In man, the act of rumination is generally an involuntary one. In a case mentioned by Blumenback, and one also by Peter Frank, it was considered as dependent on the will. It is related by Dr. Heiling that Professor Westendorf, of Güstrow, was able to ruminate whenever he wished, but that if he took any active exercise after meals it would certainly occur. It may also be remarked that if another disease should supervene, such for instance as gout, or rheumatism, the affection might cease. Pressure with both hands on the stomach, we know, if freely made after a meal, will produce the same effect.

Peter Frank was of the opinion that in persons who suffer

from eructations, and are voracious, rumination is induced by a bad habit, the ruminating matter offering an encouragement to the repetition of the experiment. By regurgitation is meant that act or process by which the contents of the stomach are eliminated, whether of the fluid, gaseous, or solid nature, without much or any nausea, without any or very little convulsive effort, without sickness, or any change of color or tinge appearing in the face during the act; in truth, having the appearance as though the fluid or solid contents of the stomach issued from the stomach without any difficulty or exertion. In the same individual, the food may be sometimes vomited and sometimes regurgitated, and it may be cast off entirely, and sometimes discharged, as in the case of our patient, mouthful by mouthful till the whole is rejected, occupying from half an hour to one and a half or two hours. The food is therefore in some instances partly digested from the length of time it is being regurgitated, and will sometimes not be digested, and the act of regurgitation may then be difficult to recognize from vomiting.

Regurgitation, as well as rumination, are normal and natural functions of various forms of the animal creation. In many of the lower order of the polypi, the entire order of the entozoa, the sterelmintha of Rudolphi, the superfluous part of the food is regurgitated after the nutritious portion is abstracted by digestion. In fishes, the same is likewise noticed. In birds it is also recognized, such, for instance, as the vulture, eagle, the pheasant, parrot, and the pigeon, and it is strikingly manifest, as we have all seen, in the ruminating class, as the ox, cow, sheep, etc., etc. The act of regurgitation differs in different animals, and which is owing to the physical structure of the muscular fibres of the œsophagus, whether they are of the striated or non-striated form. In the rodentia, according to Edward Weber, he has invariably found the muscular fibres of organic life, which present both longitudinal and transverse stria, while in birds, the muscular fibres are non-striated and organic; in the former, the movement is entirely that of animal muscles, in the latter, of organic muscles. In cats and dogs they are of a mixed character, the movements accordingly correspond with the double type. Judging from these investigations, it resolves itself into the proposition, that those muscles that contract and relax are of the striated form, and those that contract slowly and in a vermicular manner presents the non-striated form. It is but lately we have learnt the

movements of the œsophagus in health in man, and the important part it plays in vomiting or disease of the stomach.

According to the observations of Müller, and Majendie, and Budge, rhythmical contractions of the lower portions of the œsophagus takes place independent of the act of swallowing, lasting about thirty seconds, and continuing longer the fuller the stomach may be. The contraction passes gradually into relaxation, which is again followed by contraction, so that the cardiac orifice of the œsophagus is not always closed equally and perfectly. Though experiments have shown that, when the œsophagus is in perfect order no food can pass into it, and, in the act of vomiting, the experiments of Legallois, Beclard, and Majendie have, during the act of digestion, demonstrated the antiperistaltic motion of the œsophagus, the reverse of that which it excites in deglutition. In the numerous experiments of Dr. Reid, it frequently happened that muscular contractions of the œsophagus induced by irritating the par vagum in the neck, extended over the cardiac extremity of the stomach, but they were slower, more prolonged, and vermicular, than in the œsophagus. In the pheasant and pigeon there is, however, a change that takes place in the internal surface of the crop, at the time the young are hatched, and at this time the pigeon regurgitates the milky secretion of the crop to nourish her young with. In the rumantia, while the first two stomachs have the power of returning the food to the mouth for rumination, the third stomach by which the act of vomiting is performed, is with great difficulty excited to exert its movement. Regurgitation is also a natural act in some instances in man, as is frequently noticed in the nursing infant, when its stomach is repleted, a portion of the milk is regurgitated, and the process of digestion then goes on to completion; and in the adult we notice in some cases, where large quantities of gases are generated, and which, on being thrown up, leave the individual easy, that digestion is then accomplished afterwards with more comfort. We recognize the salutary influence also in the rejection of morbid fluids which mark certain forms of indigestion, as in pyrosis. In pertussis, which is considered by many pathologists as an affection of the par vagum, engaging those portions that go to the chest and œsophagus. In this disease it is noticed that, after the cough, a part, and sometimes the whole, contents of the stomach are regurgitated by the child, and as soon as rejected, the child will again resume its eating, imme-

diately after the paroxysm, and it is rejected without much or any effort, nausea or convulsive action of the stomach.

From the intractable nature of the cases we are discoursing upon, continuing, as they may, for several years, provided no organic lesion should spring up, (and we can record one instance of two years, and another of three years duration,) which recovered without any lesion; in cases of this nature, the mind of the medical man will naturally grow incredulous respecting the true character of the disease, and will again and again feel strongly inclined to suppose or believe that organic changes have occurred, or must exist, where such a lengthened continuance of a disease has shown itself, and that the various forms of degeneration of that organ, either of the fibrous and cancerous order, and perforating ulcer, or ulceration, may be present, and even sarcinæ. If this view is not entertained, and various forms of treatment been adopted and proved of little or no avail, hysteria generally comes in for a solution of the difficulty, as throwing more light on the subject, for want of more satisfactory explanation, presuming there is "something behind" not yet clearly recognized being either idiopathic or sympathetic of some uterine or ovarian trouble, or possibly from some internal organ—such as the liver, kidney, or tuberculous affection of the brain, or a general tuberculosis. Emesis in diseases of this nature occurs not only during the time of digestion, but between the time of eating, and possibly some slight hæmorrhage may be manifest, as adding to the solution of the disease; this, however, is not the case in instances of regurgitation. For in nearly every instance, in which regurgitation occurs, the food is immediately, or very soon after it is partaken of, rejected, and whilst it is undergoing the process of digestion. Believing that this one symptom of diagnosis will be sufficient, together with the history of the case, while the food is rejected, and the slight emaciation that occurs, to draw attention to that peculiar morbid condition of the stomach, I will not discuss the further diagnostic symptoms incident to the other morbid affections of that organ.

Entertaining the opinion, from the first time the patient came under my charge, that the symptoms were those of regurgitation and not of vomiting; that the affection was seated in the par vagum, and more especially its cardiac extremity, and the stomach was only partially implicated, and that through the ganglionic or solar plexus of nerves, and that it was believed to be free from any disorganization of its

tissues. The indications, therefore, of treatment would be directed to overcome the irritation of that portion of the nervous system to obtain a favorable result. At the instance of Sir Joseph F. Olliffe, during the month of May last, this opinion was communicated to himself and Professor Trousseau, under whose care the patient was during her sojourn in Paris, for three months. Having taken this view of the nature of the affection which my patient was affected with, let us see what reason there was why such an opinion should be entertained, and for the kind of treatment which was adopted, and which has been the means or instrument of the restoration of the invalid to her general state of health.

We are aware that the par vagi arises from the corpora olivare and restiform, that it sends many fibres over a large space and to many organs, such as the external ear, pharynx, larynx, œsophagus, trachea, heart, and lungs, and some to the stomach, and also to other viscera of the abdomen. In their course they communicate with the sympathetic, and to the cerebro-spinal nerves to a partial extent. It is considered by Stilling, Vankempen, Müller, Reid, and others, as a motor and sensiferous nerve, and that it has been proved by Dr. Reid, and other physiologists previous to him, that irritation of the trunk of the vagus excited motions in the œsophagus which extended over the cardiac portion of the stomach, and as Müller has remarked, that the motions of the œsophagus are dependent on the motor fibres of the vagus, and are probably excited by impressions made on the sensitive fibres of that nerve. The vagi has no motor influence on the nerve of the stomach for neither by galvanic influence nor by mechanical irritation applied to the neck, can motions of the stomach be excited; but lesion of the vagi is generally followed by rejection of food, loathing of it, and arrestment of the digestive process, as has been incontrovertably shown by numerous experimenters.

Digestion may, however, occur, though the nerve has been divided in the neck, even when the extremities are an inch apart, and that when divided, and in contact, the digestion was more perfect, and that if irritated by pinching, etc., digestion was more easily accomplished. We are, therefore, justified in concluding that a deleterious influence is propagated downwards to the stomach by lesion of the vagi, either by pressure on it, or by disease.

In the tenth and eleventh experiments of Dr. Reid, on the vagi of dogs, the vomiting was very frequent, and the ani-

mal would vomit up its food, afterwards partake of it again, and then reject it again, and this continued for several minutes. The death of the animal was attributed to the frequency of vomiting, and on examination after death, there was evidence that digestion was proceeding at the time of dissolution. As the experiments are of so much interest, and bear so clearly and pointedly on the subject, as illustrating the function of that nerve while under lesion, I have thought it might not be amiss to quote the eleventh experiment, as exhibiting the close analogy to cases of regurgitation in man.

The subject of the experiment was an old and large pointer. The vagi was cut on the 27th June, at half-past eight, A.M. On the 28th, he was dull and languid; had no apparent uneasiness; refused to eat, and had a little vomiting. On the 29th, took a little food, which was soon vomited. On the 30th, was dull, and vomited a small quantity of food taken. 2nd July, took a quantity of milk, which was vomited some time afterwards. 3rd, appetite deficient, and the food taken was vomited after a shorter or longer time. On the 5th, still vomited a great part of the food taken, and was evidently becoming more feeble. At three P.M., was poisoned with prussic acid, and died soon afterwards. On post mortem examination, soon after death, the stomach was found healthy and slightly red on the inner surfaces, as is usual when digestion is proceeding. This was also the case in two other experiments of a like nature. After lesion of the vagi, vomiting, or rather regurgitation, is generally occasioned by the presence of the food in the stomach, and not from any irritation of the nerve itself, even if it is divided; and it has been remarked that dogs made no effort to vomit, when the stomach was empty, but were seized with vomiting immediately, or soon after food was taken into the stomach, where lesion of the vagi existed. It is very apparent, therefore, from the experiments so carefully carried on by the eminent physiologists referred to, that there is a marked and distinct difference between the physiological action of the nerves going to the stomach, and the œsophagus, and that when vomiting is produced by the lesion of any internal organ, it is by a reflex action, transmitted from the irritation of the brain to the medulla oblongata first, and then reflected to the stomach; but that cases of vomiting, or rather of regurgitation, may exist idiopathically when the lesion of the par vagi is solely affected, as we have shown; and further, of the central organs, the spi-

nal cord rarely bears an etiological relation to vomiting, for injuries and diseases of that portion of the nervous system are so uniformly followed by paralysis of the expiratory muscles, that that alone accounts, according to Romberg, for the rare occurrence of vomiting as a concomitant symptom. In the observations by Olliver, there are but few instances, and they apply rather to the first stage of myelitis, than to other spinal affections; but on the other hand, the brain bears a close relation to vomiting, for we have often seen how a mental impression quickly suffices to produce it. Instances of voluntary vomiting are very rare, though it is recorded that Bichat possessed this faculty.

When I reflected on the views that have been promulgated of the natural action of the œsophagus, the result of the experiments on the par vagum in animals, where there was a lesion of that nerve, seeing the persistency of the regurgitation of my patient, with the slight emaciation when I first saw her, and noticing also the ease with which she rejected her food, of whatever form it might consist, of fluid or solid, and occurring at the time the food was taken, and seldom or ever without something was partaken of, though of the slightest or smallest quantity, it was evident that the case presented the appearance so nearly allied to the par vagum, where lesion had occurred from experiments on that nerve in animals, and that that nerve had therefore undergone a lesion in some form or other. Being unsuccessful in overcoming or mitigating the affection whilst she was under my charge by treatment previous to her sailing for Europe, and then returning without having received any benefit from the treatment of several of the most prominent professional gentlemen in Paris, with the views I entertained, I deemed it advisable that chloroform should be tried after the patient had partaken of food, and the reasons for this method of treatment I will now relate. The par vagum was considered as the *point de depart* of the malady, with the solar plexus of nerves going to the stomach incidentally engaged, and that in consequence of this the *anti-peristaltic motion* of the *œsophagus* had *occurred*, that the *stomach* in a great measure had *ceased* to *perform* its *natural* functions perfectly, and that it was possible if the *anti-peristaltic* action of the *œsophagus* could be *arrested* or *quieted* after *food* had been taken, thus permitting the stomach to assume its natural and perfect functions, which it had not done for nearly a year, and the digestion process sustained for one or one and a half hours without

regurgitation, more nourishment would be taken into the system than she had received during the time she was usually engaged in disgorging her food as she was accustomed to do. For this, must have been the only way in which she had existed, or else she would have died of inanition. The first trial we have noticed, July 17, was in some measure successful and warranted a repetition of the remedy, and on the 19th July, after a full meal for her dinner, proved to be so successful that there was no occasion to resort to it again, nor to any other remedial agent, except a few doses of the mixture as stated above.

I am loath to believe, with the views I have expressed, why there was functional lesion of the eighth pair of nerves, and of that portion going to the cardiac extremity of the stomach, corroborated by the experiments of so many eminent physiologists, they could be viewed as speculative in their character, and the treatment considered as of the same order, for this view must, I think, be negatived by the success which has attended the administration of the remedy, while the stomach was repleted, proving, I think, the correctness of the reasoning, and as excluding the malady from that protean form of disease, hysteria, under which so many affections are classed, for want of a better and more scientific explanation.

It might be alleged that as the mind was materially affected at its commencement, and as one of the exciting causes, the mental impression may have sustained the affection, but this can have no validity, as the same circumstances that existed at the commencement, and previous to its occurrence, still continue as at that time.

It might be supposed that the sea voyage on her return home had conduced to the favorable result of the case, but this could not reasonably be alleged as aiding in the least to the benefit of the patient, for the affection continued in the same manner as previous to her leaving America, nor did the quiet and rest which she enjoyed at home aid her, as no improvement had manifested itself till the inhalation of the chloroform had been resorted to, two weeks afterwards.

I am not unmindful, however, that changes may occur in the cardiac extremity of the stomach when the disease has existed for a considerable length of time, and that the œsophagus may, in its tissue, take on the degenerative form. In three ruminating individuals all of the male sex, Arnold found the œsophagus in the stomach considerably dilated, limited above by a constriction, so as to form a genuine cardiac vestibule—the

muscular layers of the stomach and œsophagus were strongly developed, and in two of the cases they were larger and wider than usual. In the first instance, the internal branch of the accessory of Willis was much larger than usual, so as almost to equal the *external branch*, a relation similar to what is found in ruminating animals. Joseph Frank relates a case of a Professor at Wilna, who died after suffering, some few years, from vomiting, and, on examination, the vagi were found surrounded on each side by a steatomatous tumor. In a female, three months advanced in utero-gestation, who was subjected to much vomiting, thirty or forty times a day, reported by Lobstein, the semilunar ganglion, with the par vagum was in a high state of irritation. The stomach was found perfectly healthy on post mortem examination. There is, therefore, no question that the sources of reflex irritation, proceeding from the sensory fibres of the vagi, occupy a prominent rank.

In conclusion, I need not say I have experienced no ordinary pleasure in presenting this interesting case to the attention of the Association, with the few remarks on regurgitation, and the reasons for the pathology of the malady, and why this method of treatment was adopted. I think it exhibits the application of a remedial agent through physiological deduction, and not through a mere empirical manner, or as a mere hysterical affection, and serves to prove the great benefit we have derived from the patient and scientific results of the experiments of so many eminent physiologists, and as the presentation of a new method of treatment in affections of this nature, and I should apprehend of others of a like character, as for instance in those of utero-gestation which sometimes assume the same phase.

ART II.—*On Neuralgia; with the Report of two Cases of Excision of the Nerve.* By JOHN A. LIDELL, M.D., Demonstrator of Anatomy to College of Physicians and Surgeons, New York; Surgeon to Bellevue Hospital, etc.

OPERATIONS for the relief of neuralgia are perhaps not sufficiently esteemed by surgeons at the present day. "Experience," says Miller, "has proved, that the relief, if any, obtained by such operations, is but partial and temporary, and the neuromatous enlargements, which form on the truncated extremities of the nerve, are likely to produce ultimate

aggravation. The operation, in truth, may be the means of converting an example of neuralgia, unconnected with structural change in any part of the nerve, into a worse form, dependent on structural change, not only considerable, but probably irremediable. Sometimes the operation has proved successful upon one nerve, only to drive the neuralgia to another—perhaps inaccessible." Grant that such untoward results have followed both the simple division and the removal of a portion of the affected nerve. But do they *always* succeed these operations? Do they stand to each other *constantly* in the relation of cause and effect? Most certainly they do not, for it has happened many times that agonizing sufferers have derived both complete and permanent relief from their pains by the aid of a surgeon's knife, after all other means had entirely failed. In these cases, no one can doubt that operative interference is not only justifiable, but demanded by humane considerations. The simple division and even the removal of portions of nerves affected by neuralgia are, therefore, operations which should not be ignored by the surgeon, whose duty it is to treat the more aggravated and unmanageable forms of this distressing complaint.

Since experience has proved that the surgeon's knife cannot relieve all cases of neuralgia, the question naturally arises, to what class of cases the knife is applicable, or, in other words, what are the indications for operative interference. This question has been fitly answered by Mr. Erichsen, for he says that an operation "can only be of service when the pain is peripheral, occasioned by some local irritation existing between the part cut and the terminal branches of the nerve."

Apropos to this statement is the case related by Mr. Abernethy, of a lady who suffered from a neuralgia affecting the parts about the inner edge of the nail of the ring finger of the left hand. In course of time, the pain "extended all up the nerves of the arm," and, after eleven years of suffering, a cure was effected by cutting down upon, and removing a portion of, "the nerve of the finger from which all this disorder seemed to originate."

Mr. Lawrence, also, in a case of neuralgia resulting from a wound of the finger, excised a portion of the nerve "with permanent success." And Sir Astley Cooper completely cured a patient having "severe pain in the thumb, extending up the arm to the neck, and causing a distortion of the

neck, fits," etc., by cutting down upon the radial nerve by the side of the flexor carpi radialis longus, and excising about five-eighths of an inch of it.

It will be observed that, in all these cases, the nerve was excised between the seat of irritation and the nervous centre; that the object of the operation was to break the line of communication between the painful part and the sentient being. This lesson from experience is in perfect accordance with the teachings of physiology, and furnishes, I apprehend, an important fact for the guidance of the operative surgeon. If the nerve can be excised between the seat of irritation and the nervous centre, so that an impression cannot be conveyed from the affected part to the sensorium, then will an operation be attended with success, and a cheering prospect may be held out to the suffering patient.

But, unfortunately, an operation cannot always be performed under these favorable conditions. Unfortunately the local mischief productive of the neuralgia may exist in the brain itself; in the track of the nerve before its exit from the cranium; in the foramen through which it escapes, and even in remote parts of the body. In all such cases the knife cannot afford any rational prospect of cure, and, in the lighter forms of the disease, may even be productive of mischief. A curious fact may, however, be mentioned in this connection. It sometimes happens in cases where the nerve is not accessible between the seat of irritation and the nervous centre, that excision performed exterior to the seat of irritation affords relief, extending through weeks and even months. Might not the operation of excision be applicable to an extreme case of tic douloureux of this character, and of long standing, all other means of relief having failed? Might it not be justifiable and even humane to afford the patient this chance of temporary respite from suffering?

I have been led to make these reflections by a very severe case of tic douloureux, which first came under my notice about the 20th of September, 1854. The patient, a woman, was in the medical division of Bellevue Hospital, under charge of Dr. George T. Elliot, one of the physicians to that charity, who kindly invited me to see her in consultation. She appeared to be about the middle period of life, pale, and emaciated. Her countenance was distorted with the severest suffering which ever came under my observation. Her mouth was drawn somewhat to the right side, and the muscles of that side of the face were twitching spasmodically. She was

rubbing her cheek, just anterior to the ear, very diligently with cold water for the purpose of obtaining relief. In a few minutes the paroxysms passed away, but she had scarcely commenced to reply to my questions when it returned with great intensity. After a little while she succeeded in informing me that the pain, intense, "almost driving her crazy," and cutting in its character, always commenced in the right side of the lower lip, a little above the mental foramen, shot along the canal of the lower jaw to the front of the ear, and radiated somewhat over the right side of her head above the ear. The lower lip was considerably swollen, more, however, on the right than on the left side of the median line, and on its inner or mucous surface of the same side there was an apthous ulcer. She did not suffer any pain in the parts supplied by the ophthalmic and superior maxillary branches of the fifth nerve. The pain was paroxysmal, lasting from ten to fifteen minutes, and occurring after intervals of five or ten minutes, thus presenting the characteristic symptoms of tic douloureux in its worst form. She could not masticate any solid food, and even the act of swallowing or speaking would often induce a paroxysm. She got no rest by day and but little sleep at night, even with the aid of powerful anodynes. She had been admitted to the hospital on the fifth of September, fifteen days before I saw her, having dysentery, of which she was now cured. She did not come to hospital to get treatment for neuralgia, for she long before had deemed that incurable.

Case 1.—Her name was Margaret B., æt. 34 years, by occupation a housekeeper; married; and was born in New York. She dates her sufferings back fifteen years, when she was nineteen years old. Then, at the beginning of winter, she was suddenly and without apparent cause attacked with pains of a most excruciating character, which commenced in the lower lip, involved the whole course of the lower jaw of the right side, internal ear, and right side of head including right half of forehead. No other part supplied with nerves by the ophthalmic branch of fifth pair, appeared to be the seat of pain, nor was any part supplied by the superior maxillary nerve involved. These pains were intermittent and recurred at intervals of fifteen or twenty minutes. Their intensity continued unabated for the three subsequent months, when they began to decline and gradually disappeared. The patient accounts for this departure of her neuralgia, by the occurrence of pregnancy, for in all her pregnancies, nine in

number, she has observed, that, between the first and second month the facial pains have begun to subside, and by the eighth month have entirely disappeared. Then, she always has remained free from neuralgia till from three to six weeks after confinement, when the pains have returned with all their original intensity.

In this way she suffered on through a period of about ten years, trying a great variety of remedies, but without any benefit. At the end of this time, she succeeded in obtaining relief while under the care of a medical gentleman in New Orleans. The molar teeth (all sound) of the lower jaw of the affected side were extracted, but without any benefit. After that the supra orbital nerves were excised, together with branches of the portio dura going to the cheek from the parotid gland. The wounds were not allowed to heal for two or three weeks. Immediately after the operation she was salivated and then kept under the influence of mercury for four or five weeks. The pains continued with unabated severity for three weeks, when they began to subside, and at the end of two months entirely disappeared. This remission lasted two entire years. Thus relief was first brought to her by the operative surgeon, after ten years of useless trial of other means.

She was again attacked with the tic, about three years ago while on a sea-voyage from New Orleans to New York, about three weeks after the birth of a still-born child. A great variety of remedies were again administered by different physicians, but without benefit, and she confessed to the taking of various patent nostrums recommended for nervous troubles. Failing to obtain relief from any source, she despaired of cure at the time of admission to the Hospital.

After careful examination it seemed to me clearly, that the nerve involved in the neuralgia was the inferior maxillary branch of the fifth pair, and that the seat of irritation producing the mischief was somewhere in the inferior dental branch, either in the filaments distributed to the lower lip, or in the canal of the jaw. I was led to this conclusion by the fact that *the pains always commenced in the lower lip and darted backwards along the course of the inferior dental nerve*, and then radiated over the side of the head. It occurred to me that an operation would be likely to benefit the patient, and that the removal of a portion of the inferior dental nerve from the canal of the lower jaw, afforded the best chance of success. I gave this opinion, in which Dr. Elliot coincided and he kindly transferred the patient to the division under

my charge for surgical treatment. My colleagues unanimously sanctioned the proposition, and accordingly, on the 9th of October, 1854, the patient being under chloroform. I proceeded to operate, assisted by my friends Drs. Crane and Elliot, and in the presence of the House-Staff and other medical gentlemen.

An incision through the integuments was commenced about three quarters of an inch in front of the lobe of the right ear, and carried parallel to the ramus down to the base of the jaw a little in front of the angle, then continued forward along the base till the facial artery and vein were crossed, then carried upward parallel to the first incision, terminating below the track of Steno's duct. The facial artery and vein were exposed, tied, and then divided so as to save effusion of blood. The anterior portion of the parotid gland was turned back, the original incision continued inward through the masseter muscle, and the anterior portion of the insertion of that muscle separated from the jaw. The tongue of flesh thus formed with the knife, was raised, exposing the jaw over a considerable part of the inferior dental canal. The cavity of the mouth was not opened. A trephine of small size was then applied to the level surface of the jaw laid bare by the previous detachment of the masseter muscle, a button of bone removed, and the interior of the jaw exposed. The trephine was again applied a little in front of this spot and another button of bone taken out. In this way the inferior dental nerve was laid bare to the extent of fully one inch. It was then removed, and the spongy interior structure of the jaw scooped out along with it. This last step was executed for the purpose of obliterating completely that portion of the inferior dental canal, and for the further reason that a new bony formation would be likely to prevent a reunion of the excised nerve. A probe was then thrust into the dental canal and pushed as far as the mental foramen with a view to crush and destroy, as completely as possible, what remained of the nerve. The operation was now complete. The bleeding was easily stanched, the soft parts were brought into a proper position and secured by three points of interrupted suture and narrow strips of adhesive plaster. Cloths wet with cold water were ordered to be applied, and morphine in full doses internally. The patient suffered so much from the effects of chloroform that she did not fully recover her senses for two days. Her sufferings did not abate much for some time after the operation, although the

pains were essentially altered in character. She could not open her mouth or laugh or smile, or move the muscles of that side of the face in any way without disturbing the wound, and suffering much from the soreness thereof. The pains continued very severe for a fortnight, and then gradually abated. In four weeks she was able to partake of solid food, (which she had not done for over a year) and was entirely free from pain in the face and head. She had become so much emaciated and weakened by the severity and long duration of her sufferings, that some time was required to completely re-establish her health. The only untoward occurrence during convalescence, was an attack of facial erysipelas, which was readily managed by the local use of lead and opium wash, and the internal administration of the infusion of rhubarb and soda, together with tonics. On leaving the hospital, the patient was particularly requested to report to us immediately if her neuralgia should return, as we were anxious to be informed with regard to the result of the case. About six months after the operation she came to the hospital of her own accord, to report that she continued free from suffering. And one year after the operation I met her in a railroad car when she appeared to be in perfect health, since which time I have neither seen nor heard from her. The presumption is that she is still well, although about two years have elapsed since the operation.

Case 2.—*Tic Douloureux of eight years standing—Removal of a portion of the superior maxillary nerve from the infra orbital canal, etc.*—Martin M., æt. 29 years, born in Ireland, by occupation a carpenter and joiner, was admitted to Bellevue Hospital on the 19th day of September, 1856, for a very severe tic douloureux. He informed us that his family were not predisposed to any disease, and that no member of it had had neuralgia. He was attacked very suddenly about eight years ago, directly after shaving off his whiskers, and he attributes his difficulty to "catching cold in his face." He had intense lancinating pains, commencing generally in the right side of the nose or thereabouts, and shooting back along the track of the superior maxillary branch of the fifth nerve. Occasionally the pain began in right forehead. These pains occurred in paroxysms which lasted five or ten minutes, and recurred at short intervals. They were excruciating, and almost insufferable in character. Up to this time, his health had been good, and his habits strictly temperate. All the usual and many of the unusual remedies for tic douloureux,

were administered to the patient by different physicians, but without any benefit. About five years ago, or in other words, about three years after his attack, a long incision through the scalp above the right ear was made by a distinguished western surgeon, but without affording any relief whatever. All the upper teeth on the right side have been extracted, but with the same result. About one year ago, (seven years after attack), he placed himself under my care. He was suffering very severely, having paroxysms every ten or fifteen minutes, which lasted five minutes. The paroxysms generally commenced with acute pains, beginning at a spot about midway between the right side of the nose and the infra orbital foramen, and shooting back along the infra orbital canal in the track of the superior maxillary nerve. The spot above mentioned, was tender and somewhat swollen. Touching it, immediately induced a paroxysm. Occasionally a paroxysm commenced with pain in the frontal branches of the supra orbital nerve.

All other means having failed to afford benefit, and encouraged by the result in Mrs. B.'s case, I resolved to attempt an operation for this man's relief. I cut down upon the branches of the supra orbital nerve near the supra orbital notch, and excised the principal of them to the extent of about three-eighths of an inch. I then cut down upon the infra-orbital filaments near to the infra orbital foramen, with a view to treat them in a similar manner, but the bleeding was so profuse and protracted, that I was unable to see them, and, therefore, had to content myself with simply dividing them. In a week after the operation, he was entirely free from the neuralgia, for the first time since his attack, which occurred about seven years before. At this time I lost sight of him, and did not see him again till about two weeks ago, when he called at my office. He then informed me that he continued relieved for six months after the operation, and that the neuralgia returned shortly after the incision in his cheek had healed, or in other words, as soon as the divided nerves had united. The paroxysms were very severe, appearing at intervals of ten or fifteen minutes, and lasting about five minutes. The pains seemed to begin in the spot already alluded to, about midway between the side of the nose and the infra orbital foramen, and to shoot back along the course of the superior maxillary nerve to the Casserian ganglion, thence they radiated, as from a centre, to the right side of the head, lower jaw, etc. While reflecting on his case, and the

great relief which the simple division of the infra orbital branches had afforded, it occurred to me that if I could remove a portion of the trunk of the superior maxillary nerve from the infra orbital canal, the relief produced by the operation would probably be of longer duration, and might even be permanent. The patient stated his willingness to submit to almost anything which would be likely to rid him of his sufferings, and by my advice entered Bellevue Hospital, on the day already mentioned, for the purpose of having the operation performed.

The infra orbital canal can be opened in two ways, so as to expose the superior maxillary nerve. The first method requires for its performance, the upper lip to be cut through, the cheek to be divided and dissected off from the upper jaw sufficiently for the antrum to be opened with a trephine. Then the roof of the antrum can be cut away in such manner as to expose the nerve. But it will be observed that this procedure requires the operation to be complicated by opening two cavities, viz.: the cavity of the mouth and the cavity of the antrum.

I practiced the other method in the following manner; my colleagues, Drs. Crane and Sayre, giving me efficient assistance. The patient being fully etherized, I commenced a semi-eliptical incision by entering the knife on a level with, and about three quarters of an inch external to, the outer canthus of the right eye, cutting through the skin and adipose cellular tissue, in a curved direction, downwards and inwards, almost to a level with the alæ of the nose, then cutting upwards and inwards, also in a curved direction, along the side of the nose, terminating the incision on a level with, and half an inch internal to, the inner canthus of the same eye. The incision was carried down to the malar and superior maxillary bones, and the oval flap carefully dissected up to the inferior margin of the orbit, thus freely exposing the spot where the nerve escapes from the infra orbital foramen. The spouting vessels were tied as fast as they were exposed; I then proceeded to carefully detach with the handle of a scalpel, the flap from the margin of the orbit for a little distance backward, the eye-ball being at the same time carefully pushed upward by the fingers of an assistant, so as to give more room for the necessary manipulations. Then the flap and eye being carefully held up by two bent spatulæ; I applied a small sized trephine to the margin of the orbit, directly above the infra-orbital foramen, and removed a but-

ton of bone, thereby converting that foramen into a notch, and opening the anterior portion of the infra-orbital canal, thus exposing the trunk of the superior maxillary nerve. The trephine should be used with caution, for if too much force be employed, the operator will unwittingly push the instrument downward and backward into the antrum. A tenotomy knife was now thrust into the canal, and the nerve divided as far back as possible. The distal portion of the divided nerve was then turned forward and carefully removed. By this method, we excised fully a half inch of the nerve in question. We had troublesome hæmorrhage from the infra orbital artery, which required the actual cautery to arrest it. A sharpened stick of lunar caustic was then thrust into the canal and held there for a couple of minutes for the purpose of destroying the nerve to a still greater extent. It will be observed that neither the cavity of the mouth nor the antrum was opened. The excised piece of nerve appeared to be healthy at the pont of division, but its external or distal portion was thickened, indurated, and reddened. The flap was replaced and secured by two points of interrupted suture, and the cold water dressing ordered. The patient was put upon a low diet, and directed to take morphine *pro re nata*. During the first day after the operation he had comparatively little pain, but on the second and third days his sufferings were very severe, which was probably due to the thorough cauterization of the nerve. On the fourth and fifth days, the pains gradually abated, and on the sixth day he went out of the hospital relieved. Fully two-thirds of the wound had united by the first intention; the most depending portion was left to heal by granulation. The operation was followed by little or no constitutional disturbance. The eye was not interfered with, and the deformity was slight.

The patient promised to visit me, from time to time, in order to afford an opportunity to observe the progress of his case.

OCT. 1, 1856.

ART. III.—*Syme's Amputation through the Knee for Chronic Disease of the Joint.* By THOS. M. MARKOE, M.D., Surgeon to the New York Hospital.

In the *London and Edinburgh Journal of Medical Sciences* for May, 1845, Mr. Syme, then Professor of Clinical Surgery in the University of Edinburgh, published some observ-

ations on amputations of the thigh, in which, after alluding to the mortality and the accidents which occur after this amputation, he says: "I am at length led to the conclusion that there is something radically wrong in the principle of the operation. This error I believe to be, dividing the thigh bone through its shaft, instead of the condyles or trochanters." He then goes on to show that, in a large proportion of the cases in which the thigh is usually amputated, we may with propriety cut through the condyles, or through the spongy substance of the trochanters. In particular, he specifies diseases of the knee joint as affording a large share of the subjects of amputation of the thigh in civil practice, and of them he says: "In regard to diseases of the knee joint, it is well ascertained that the warrant for amputation lies in the bone, and not in the soft parts, which, however much altered through scrofulous degeneration or suppuration, readily admit of restoration to their natural condition, as is clearly shown by what happens after excision of the elbow, or ampu tation atthe ankle joint."

Reasoning thus from the dangers and inconveniences of the operation through the shaft of the femur, and encouraged as to the behavior of the soft parts by the analogies of excision, Mr. Syme is led to propose the amputation through the knee joint as the safest and best procedure in diseases of that joint which require amputation. The first case in which he operated was a young man, 21 years of age, with a diseased joint for five years. A large abscess had broken on the side of the patella. The operation was performed in January, 1844, by making "an incision across the knee, on a line with the upper edge of the patella, then pushed the knife from one side to the other under the joint, cut a flap from the calf of the leg, and finally sawed through the condyles of the thigh bone, so as to remove the whole articulating surface, which was ulcerated and carious." The recovery was slow, from the flap being scant, but was ultimately completed without accident.

In another case, reported at this same time, the same procedure was adopted, with the exception that the anterior incision was carried below, instead of above, the patella, thus giving a larger anterior flap. The recovery in this case was very satisfactory.

Mr. Syme has, since the above date, operated several times, and with such success that Mr. Fergusson has adopted the operation, and now frequently performs it, and may indeed

be considered its most strenuous advocate and supporter. Mr. Jones, of Jersey, has also recently performed the operation, and with a most satisfactory result.

Prepossessed as I have long been in favor of knee joint amputations, I was prepared to be favorably impressed by the flattering accounts given by Mr. Syme and Mr. Fergusson of their success in these cases, and determined, as soon as a favorable opportunity offered, to give a trial to an operation which appeared to me to be founded on sound surgical principles. The following is the only case which has afforded that opportunity :—

Catharine Schoonmaker, æt. 22, was admitted into the New York Hospital September 11, 1856, with a chronic affection of the left knee joint. She said that her disease had commenced about three years before, in consequence of a blow received upon the front of the patella, which had been followed by a chronic inflammation, from which the joint has never since been entirely free. The disease of late has increased so much in severity as to disable her entirely. The joint presented the usual appearances of chronic inflammation of the synovial membrane, and as such it was treated by local depletion, counter irritation by blisters and issues, with absolute rest and careful attention to her general health. She received no benefit from our treatment, nor were we able even to give her any considerable relief from her sufferings. The pain in the joint became nearly constant, much aggravated at night so as to prevent her from sleeping, and much increased by the slightest motion of the limb. The whole joint, by the end of November, had undergone a change in its appearance. It was uniformly swelled on all sides, firm to the feel, superficially not tender to handling, but deep pressure giving a great deal of pain. The patella was rigid and fixed in its position. There was no manifest fluctuation, and no evidence of suppuration external to the joint. The integuments were sound excepting the scars of two issues, which by accident had been placed immediately over the joint, instead of a little distance from it. Her general health was remarkably good for one who had suffered so much and so long. Discouraged by the failure of treatment, and worn out by pain and want of sleep, she begged to have the limb removed ; and on consultation, seeing no prospect of a cure, it was determined to accede to her request. The soundness of the integuments, and the moderate distension of the joint, seemed to make this a favorable opportunity

for trying Syme's amputation at the knee joint, and, with the approbation of my colleagues, it was accordingly performed on the 3rd of November, 1855. The operative procedure differed entirely from that recommended by Mr. Syme and adopted by Mr. Fergusson. In fact, I proceeded precisely as in amputating through the healthy knee joint, by making a long anterior flap and a short posterior one, and disarticulating by cutting the crucial and lateral ligaments, after dividing the ligamentum patellæ close to the patella. A small quantity of thin curdy pus flowed out, on opening the joint. The whole synovial surface was found inflamed, thickened, and secreting thin pus, which did not, however, exist in quantity sufficient to distend the capsule. The articular surface of the femur was found denuded, to a considerable extent, of its cartilage, with irregular erosions of the bone, and with several fragments of its compact covering necrosed and buried down among the ulcerated hollows of its surface. The patella was denuded in one spot of its cartilage, and was so far diseased that it was thought best to remove it. In doing this, it was noticed that the synovial cul de sac above the patella was much thickened and degenerated, and it was accordingly dissected out entire, a proceeding which was accomplished very easily, the firm and thickened condition of the membrane giving great advantage in seizing it for dissection. This left all the structure in front of the joint sound, though some portions of diseased synovial tissue were left behind and on either side. The surface of the condyles of the femur was then sawn off, and smoothed and rounded with the bone forceps, so as to present as broad and even a surface as possible on the face of the stump. The wound was brought together with five or six sutures, and dressed with cold water. Seven or eight ligatures were employed.

She slept badly the night after the operation, suffering much pain in the stump. I found it next morning very much distended with coagulated blood. The stitches in the middle of the flaps were cut, thereby relieving the tension and allowing the blood to flow out; and as there seemed no disposition to further hæmorrhage, a large poultice was applied to hasten the separation of the coagula. Some oozing occurred next evening, which induced the house surgeon to take off the poultice, and apply cloths wet with very cold water, and to remove the remaining stitches.

Nov. 8. No further bleeding has occurred. The flaps are

gaping wide apart, and beginning to suppurate, the clots having mainly broken down and come away with the commencing suppuration. The edges of the wound were now brought together with adhesive plaster, dressed with unguent peruv., and supported by a light bandage. Her general condition is good, tongue clean, relishes her food, sleeps well, and is, in fact, free from constitutional irritation. She is able to hold up her stump herself to be dressed, which, in the unwieldy condition of the heavy, gaping flaps, has proved a great advantage.

The wounds healed gradually and soundly by granulation, without any exfoliation of bone, or any other unfavorable symptom. The stump, when healed, presented a somewhat irregular and puckered scar, which, however, lay behind and between the two condyles, in such a manner that the face of the stump presented no cicatrix, where the pressure on the artificial limb would be borne. She tried for a week or two, before going home, a peg leg with an air cushion, and for a recent stump it was found to bear the pressure extremely well. She left the hospital May 19, 1856.

This operation is, in point of fact, nothing more than an amputation through the knee joint, with a single step added, viz.: the paring off of the diseased surface of the condyles of the femur. This is theoretically necessary in order to remove what appears to be, and has been generally considered, irreparable disease of the bone, I confess that I am doubtful of the universality of this necessity. From what we know of the cure of caries in other circumstances, from the secondary nature of the alteration in the bone, and from its usually very limited extent, I am disposed to think that in a certain number of cases it would be safe, and, if safe, much better, to leave the altered cartilage and diseased bone to suppurate and granulate, which I believe it would do healthily and soundly, as soon as its character as a part of a diseased joint was changed by the bisection of that joint. There are other cases, it is true, of which the one related is an example, in which disorganization of the bone has proceeded so far, with necrosis and caries combined, that the removal of the diseased surface is a point of common prudence, if not of rigorous necessity. And still further, there are cases in which the scrofulous disease of the bone has been the starting point of the affection, and in which the articular end of the femur is so far implicated that no section of the bone could be with propriety attempted in the immediate vicinity of the joint.

But with these, and possibly some other specific exceptions, I believe that the general rule might safely be, to perform the operation, and to manage the after treatment precisely as if the joint were entirely free from disease.

The advantages of this operation over that which is usually performed at the lower third of the thigh, are, therefore, mainly the same as those claimed for the operation through the healthy knee joint, as stated in my article in the number of this Journal for January, 1856. In particular, the great, and as I think the greatest advantage of these operations, viz.: the affording a stump which will bear pressure, has been most satisfactorily illustrated by some of Mr. Fergusson's cases. In speaking of the first patient on whom he operated, Mr. Fergusson says "I have rarely made or seen a better stump. He has repeatedly walked forty miles a day, and once walked one hundred and twenty miles in three days, and what is more astonishing, his false leg was but indifferently made and padded, the spoke of an old wheel being considered by the man an excellent substitute for a more expensive contrivance." Our own experience furnishes, as yet, nothing valuable on this point, for, as far as I know, the case above related is the only instance in which this operation has been performed in this country, and there has not yet elapsed sufficient time to test the capacities of the stump, of which we can only report that it promises well.

It must be particularly borne in mind, that the wonderful performance of such a stump as that described by Mr. Fergusson, must in order to be appreciated, be contrasted with what it would have been, if amputation had taken place any where above the condyles. In such a case, the end of the stump would have borne no pressure, the support of the body must have been transferred to the ischium and trochanters, and the patient, if a wealthy man, might, by procuring one of Palmer's admirable legs, have got about his necessary walking with labor and difficulty, and with somewhat the same gait as if he had anchylosis of the hip; while, if a poor man, he would quietly have submitted to the crutch for life. It is this feature of knee joint amputations which gives them their importance, and which I regard so highly, that I cannot help dwelling upon it, at the risk of tiresome reiteration.

Of the other features which may be regarded as advantages in this operation, the simplicity of the wound, the favorable division of muscles, the fewer arteries requiring ligature, and the more favorable point of section of the bone, it is not

necessary to speak in detail. Analogy and experience have both demonstrated that they belong to this modification as well, and as uniformly, as to the original amputation through the healthy knee joint.

However highly we may estimate the advantages of this amputation in certain cases, it is not contended that it is applicable to all, and perhaps not even to the greater part of cases of knee joint disease. There is no doubt, that many such cases are and always will be, most safely and most wisely treated by amputation through the thigh. It becomes, therefore, a matter of importance, that we should be able to discriminate between those suitable for, and those not admitting of, this operation. In the absence of large experience on this point, I would suggest the following as cases in which the attempt to save the end of the femur is contra-indicated:

First.—All those cases in which the spongy extremities of the bone are suspected to be primarily diseased, as is known to be frequently the case in young scrofulous subjects. We have several specimens in our museum, showing that in these cases the whole expanded extremity of the femur has become softened, infiltrated with the products of unhealthy inflammation, and therefore probably unfit to bear the violence of the saw, and unable to recuperate soundly after such violence had been inflicted. Closely allied to these, in their destructive effects upon the bone tissue, are those cases in which disease commences, in young persons, in the cartilaginous substance joining the epiphysis to the shaft of the femur. Of this we have also preserved at least one specimen in our collection, and many more have been observed. It becomes, in these latter cases, an interesting question, whether the operation here advocated, might not be so modified as to make a separation of the bone at the point of junction between the diseased epiphysis and the shaft, thereby leaving a somewhat expanded extremity to the femur, on which some pressure could probably be borne.

Secondly.—All those cases in which the synovial capsule is very much distended, and the coverings of the joint thinned. It is well known that this distension of the synovial capsule is of much less frequent occurrence than was formerly supposed. It does, however, sometimes occur, as in cases where destructive inflammation has followed injuries to the joint, and in some rare instances of idiopathic synovitis passing on to suppuration. The capsule is sometimes distended, as in a case recently dissected, by a large quantity of the curdy

precipitate which forms so common an element in strumous pus. This custard-like substance, which is, without doubt, aplastic fibrin infiltrated with pus globules, sometimes distends the capsule to its utmost capacity, without there being present any proper pus or even any serum sufficient to give the mass less than a semifluid or jelly-like consistency. In all these cases, the unfavorable circumstance is, that the distension, from whichever cause it may occur, acts principally upon the reflexion of the synovial sac which lies under the tendon of the extensors of the leg, and not only thins and disorganizes the integuments covering it, but presses the sac up the thigh, so as to form a large diseased pouch, which must necessarily be left behind in the amputation at the joint.

Thirdly.—All those cases in which large or numerous abscesses have taken place round the joint, undermining the skin, and thereby unfitting it to form part of a flap. Observation has shown us, that the suppuration which occurs in the later stages of these diseases, is almost invariably outside of the synovial capsule, having at first no direct communication with its cavity; and that in those cases where the joint is most enlarged, and fluctuates most markedly, the synovial cavity is found to present the same alterations as in those where there is less enlargement and no fluctuation, that the difference is found to consist, in these large extra capsular and most commonly subcutaneous abscesses. These abscesses must necessarily be very disadvantageous to the result of any operation performed through them. Their independence of the synovial cavity, however, gives rise to this practical suggestion. Open them early and freely, and though by so doing we may not in any degree ameliorate the primary joint disease, yet we may sometimes hope to save the patient the pain and the exhaustion consequent upon large suppuration, and we may preserve the integuments round the joint in a condition of soundness to warrant an amputation at the knee.

These three classes of cases seem to me to be those in which the operation in question is most evidently contra-indicated. There are, however, no doubt many other less obvious conditions of the joint bearing upon the question of amputation at the knee or through the femur, which can only be fully appreciated after further and carefully considered experience.

September, 27, 1856.

ART. IV.—*A Statistical Contribution to our knowledge of Abscess, and other Diseases Consequent upon the Lodgment of Foreign Bodies in the Appendix Vermiformis, with a table of forty cases.**

By GEORGE LEWIS, M.D., Physician to the Eastern Dispensary, Member of the New York Pathological Society, etc., etc.

ABSCESS of the appendix vermiformis cœci, previously to the last half century, was scarcely recognized by the medical profession. Nor is it strange that it should have so long remained unnoticed when we consider how little importance has been attached to this organ, both in a physiological and pathological point of view; and, also, how rapidly, after the first stage of the disease has passed, in the vast majority of cases, general peritonitis supervenes and masks its characteristic features, and misleads the practitioner.

The obscure character of this disease, its rapid and almost universally fatal termination invest it with a peculiar and painful interest to the physician, and render it of vital importance to the patient.

Some months since, our attention was forcibly directed to this subject, by an obscure case occurring under our own observation, in private practice, which presented many of the features of disease of the appendix cœci; but the refusal of friends to grant an autopsy prevented the verification of our diagnosis. The following collection of cases, with the remarks based upon them, is the result of an effort made soon after, to determine if possible, the history of this affection.

LITERATURE.

The literature of this disease is meagre. Various papers, by able authors, treating of abscess in the right iliac fossa, under the name of tuphlo-enteritis, and phlegmonous tumors of the iliac fossa, have appeared, but, generally, no distinction has been made between abscess originating from disease of the appendix, and those depending upon other causes.

F. M. Fanall, Esq. (Ed. *Med. and Surg. Jour.*, 1831), in a lengthy paper on phlegmonous tumors of the right iliac fossa, referring to two fatal cases of gangrene of the appendix vermiformis, reported by M. Vellemry, says it is remarkable that the disease terminated abruptly at the junction of the appendix with the cœcum. A. Grisolle, M.D., in an essay entitled *Phlegmonous Tumors of the Iliac Fossa*, based on the

* Read before the Society of Statistical Medicine.

results of a collection of over seventy cases, has included those occurring in the right and left iliac fossa; those depending upon the puerperal state; disease of the appendix cœci and neighboring parts. General conclusions, drawn from the results of cases so diverse in their origin and history, instead of throwing light upon any particular class of cases, only increases the general embarrassment, and leaves the practitioner in doubt with regard to the whole.

Dr. John Burne (*Med. Chir. Transactions*, vol. xx. and xxi.), in papers entitled *Chronic Diseases of the Cœcum*, and *Perforated Ulceration of the Appendix Cœci*, has given a brief history of this disease with cases annexed. Dr. Copland's comprehensive work contains the only account of it found in our systematic works on medicine and surgery.

Our knowledge of this disease, with the exception of the two last authorities named, is chiefly obtained from a small number of isolated cases, scattered over a period somewhat less than half a century, and reported in our medical journals under the head of Abscess of the Appendix Cœci; perforation, ulceration, gangrene of, or foreign bodies in, the appendix cœci.

The largest collection of cases, reported as disease of this organ, which has fallen under our observation, is that of M. Voz, in the *Gazette Médicale de Paris*, 1843, being ten in number; but three, however, of which are unequivocally cases of the disease in question. It is a matter of regret that the reports of many well-authenticated cases are wanting in important details.

ANATOMY OF THE APPENDIX VERMIFORMIS.

The appendix vermiformis cœci, as its name implies, is a small, hollow, cylindrical, worm-like process, varying from one to six inches in length, with rare exceptions having its point of attachment to the posterior, lower, and left portion of the cœcum, a short distance from the ileo-cœcal valve itself, like the cœcum, ending in a blind extremity.

In two cases which fell under the observation of Dr. John Burne, its origin was at the posterior, lower, and outer portion of the cœcum.

Its diameter and length present considerable variety. In shape and form it resembles an elastic catheter. It is attached to the cœcum and iliac fossa by a triangular fold of the peritoneum (the moso-cœcum) which generally extends only a part of its length. At its junction with the cœcum it is wider than in any other portion, and, in some subjects, it is

funnel-shaped, widening out to become continuous with the cœcum which, in such cases, is very narrow.

At the point of communication of the appendix with the cœcum, a fold of its mucous membrane forms a more or less perfect valve, but never so perfect as to entirely close its mouth.

In its anatomical relations, it presents many varieties, which, in a pathological point of view, are of much importance. Most frequently it is found near the brim of the pelvis, situated on the iliac fascia over the outer border of the psoas magnus muscle, snugly coiled up behind the cœcum; sometimes it descends vertically into the pelvis as in Case 42. Sometimes it is turned backward and upward behind the caput coli and colon (Case 33). In one instance Cruveilhier states that he found the free extremity of the appendix in contact with the inferior margin of the liver.

Sometimes it is turned forward and downward in relation with the small intestines or bladder (Case 9); entangled in the mesentery, or in contact with the abdominal parieties, as in Case 15, or in cases still more rare it may form the contents of inguinal hernia (Cases 13 and 28). In its normal state it contains a little mucus.

What part it performs in the animal economy is unknown; but the result of its pathological changes are painfully disastrous. When we consider the conformation of the cœcum, widening out into a cul de sac or reservoir to receive the contents of the small intestines, which, having entered, must be propelled against gravitation; also the origin of the appendix, sometimes with open mouth, and never with any efficient bar to prevent the intrusion of substances passing along the bowel, it is not strange that the latter should occasionally become the lodging-place of foreign bodies.

HISTORY.

When once a portion of scybalæ, any undigested or indigestable substance, biliary calculi, or foreign body of any nature, has entered the appendix, it may remain for an indefinite period without causing inconvenience; for the organic sensibility of its mucous membrane, like that of the intestines in general, is adapted to the presence of foreign bodies.

Numerous cases are recorded of substances found in the cœcal appendix of people dead from other diseases, who, during life, had no symptoms attracting attention to this organ. Dr. Blackadder (Ed. *Med. and Surg. Jour.*, vol. xxii.) discovered in the appendix vermiformis of a person dead of phthisis,

an earthy-looking concretion, the size of a thrush's egg, who, during life, was never heard to complain of uneasiness in the region of the caput coli.

In the *New England Med. Jour.*, 1843, is the record of an appendicula vermiformis, exhibited before the Boston Pathological Society, which was taken from the body of a man, dead of pneumothorax, at the advanced age of 88 years, and contained 122 robin-shot. During life, this man never had any symptoms indicating disease of this organ. There were no adhesions around the appendix in this case, and nothing remarkable in its appearance, except its unusual length.*

What proportion of appendices containing foreign bodies, take on diseased action, we have no data for determining; nor is it easy to explain why the same substances in the appendix of one individual should produce fatal results, while in that of another it remains perfectly innocuous.

When a foreign body lodges in the cœcal appendix, which, from its size, becomes impacted, and, from its angular form or irregular surface, proves a source of irritation, the first link in the train of morbid actions is catarrhal inflammation of its mucous coat. This exists in a chronic form, as blenorrhœa, and produces thickening of its coats, which, after long duration and frequent exacerbation, passes into ulceration. †

If the body be large and firmly impacted, it may so interrupt the circulation as to produce strangulation of its terminal extremity. If the body is discharged, and the case terminates favorably, the appendix, partially or entirely, shrivels up, forming an opaque ligamentous cord or band, as in Case 12.

When the foreign body is larger, and becomes so firmly impacted as to produce occlusion, preventing the escape of the natural and ulcerative secretion into the cœcum, and distending its blind extremity, it accelerates the morbid process. In such cases, the ulceration may be confined to the point of attachment of the foreign body; or, if the pressure is sufficient to interrupt the circulation, the terminal extremity may be gangrenous. In Case 4, the appendix was occluded by a concretion as large as the end of the

* It is stated of this man that he was excessively fond of game, and the shot found in the appendix were supposed to have been contained in the game eaten.

† See Rokitansky on catarrh of vermicular process.

middle finger, less than one-half an inch from the cœcum; the distal extremity was distended with fluid, and sloughing of its walls between the concretion had caused a perforation, through which the contents of the cœcum had escaped into the peritoneal cavity. When ulceration or gangrene do not supervene upon occlusion from the presence of a foreign body, the mucous membrane, distended and thinned by the accumulation of its own secretion, is gradually converted into a serous membrane, secreting an albuminous fluid, the appendix itself forming a hydropic sac.

If the foreign body be small, and remain loose in the appendix, the entire process may become diseased; ulceration may occur on the same or opposite sides, sometimes with irregular jagged edges or with smooth appearances; sometimes its coats are much thickened, of a dark brown color, friable and gangrenous; or, if the disease has been of long duration, they may be destroyed entirely, separating its distal from its cœcal extremity.

The progress of this disease involves different organs according to the varying relations of the appendix in different cases. When once the perforation is complete, the supervention of general peritonitis must universally prove rapidly fatal, did not the previous irritation set up induce adhesion of neighboring folds of the peritoneum, or provoke the effusion of plastic lymph. This condition for a time, in certain instances, circumscribes the discharge consequent upon the disorganization of the appendix, as well as its contents, thus postponing for a longer or shorter period its fatal termination. Dr. Warren has recorded an instance (Case 32) of this disease, in which the patient lived four years after a circumscribed tumor was discovered in the right iliac fossa. The appendix in Case 32 had become incorporated with the walls of the abscess, which must have been of long standing, although the patient had never complained of pain in the right iliac region.

Distension of the walls of abscesses thus formed by the accumulation of the products of ulceration, and the escape of fæcal matters into the abscess, causes them gradually or suddenly to give way, and peritonitis follows the effusion of their contents into the abdominal cavity.

PATHOLOGY.

The pathological condition of the abdominal viscera in peritonitis, symptomatic of disease of the appendix, is the

same as when it arises from other causes; intense vascular congestion, sero-purulent effusion, and adhesions. The inflammatory action is always most intense in those parts immediately contiguous to the diseased appendix. In one case, recorded by Dr. Burne, its intensity was so great that the peritoneum, facia iliaca, cellular tissue, and muscles in the iliac region were found in a softened and gangrenous condition. In Case 10, the appendix was displaced by the weight of a large calculus, which it contained, and found lying inferiorly against the left and lower portion of the fundus of the bladder, its superior portion perforated, in relation with a fold of the small intestines, which was also perforated, and, for some distance above and below, in a gangrenous condition. In this case, the patient suffered from distressing rectal and vesical tenesmus, the cause of which was clearly revealed by the autopsy.

In Case 42, the proximity of the diseased appendix to the right iliac veins had caused phlebitis. Its coats were thickened and contracted below the appendix; the vein was filled with lymph and blood in a state of decomposition; above it was filled with healthy coagula. The right leg in this case became œdematous, as in phlegmasia dolens. When the appendix becomes the subject of hernia, abscess forms in the inguinal canal. Two cases, Nos. 13 and 28, of this nature will be found in the table. In the first, a tumor, pyramidal in form, made its appearance in the inguinal canal, resembling hernia, which, after an attempt at taxis, became inflamed, gradually enlarging and extending until it encroached upon the testicle.

When fluctuation was detected, it had attained the size of the two fists. An incision gave exit to pus with partial relief. A second tumor below the first soon made its appearance, from which, after an illness of two months, a triangular piece of bone was discharged, and speedy recovery followed. The patient, a clergyman, died with another disease after a lapse of one month, and autopsic examination revealed the cause of his former suffering. The appendix vermiformis, three-fourths of which was in the inguinal canal, was twice its ordinary length, and three times its usual size, its coats being much thickened; its blind extremity was contracted, opaque, and firmly adherent to the bottom of the inguinal canal.

In the second (Case 28), irregular swelling of the scrotum was first noticed, which terminated in a succession of

small abscesses on its most depending portion; the spermatic cord was enlarged; the skin and cellular tissue were much thickened. The patient died exhausted after the lapse of one year. An autopsy proved the contents of the tumor to be an omental hernia, in which was enveloped the appendix vermiformis, one inch of its blind extremity destroyed by ulceration, and a free communication existing between the appendix and scrotal sinuses.

In Case 12, the tumor first made its appearance in the right inguinal region, above Poupart's ligament. Its size increased slowly, and gradually extending towards the umbilicus, where it finally discharged pus and fæces. On examination, the lower portion of the ileum and cœcum were found much thickened from former inflammation.

The appendix vermiformis cœci was bent upwards in contact with, and adhering to, the anterior abdominal parieties; its coats thickened, forming a sinus from the cœcum to within one inch of the umbilicus, with which it communicated by fistulous openings.

When the appendix becomes incorporated with the walls of the abscess, its terminal may become entirely separated from its cœcal extremity.

The proportion of cases of diseased appendix, resulting in circumscribed abscess, of the iliac fossa cannot be accurately determined. In ten only of the forty-six cases is it recorded that the remains of circumscribed abscess were observed. In four other cases, too imperfect in details to be put in tabular form, it was noticed, making ten cases in the fifty-six, to which we have made reference.

In some cases the appendix is adherent to the cœcum, and both are firmly bound down in the iliac fossa.

The diseased appendix, after passing around a fold of intestine, may become adherent, and produce strangulation. Dr. Copland mentions a case of this kind, in which the appendix, containing a small biliary calculi, after passing around the lower portion of the ileum, became firmly adherent to the cœcum. Other cases of a singular character are on record.

Dr. Lee Jones *(Dublin Medical Journal*, 1844,) found in a child who died of tabes mesenterica, who had been subject to chronic diarrhœa, the mucous membrane of the appendix extensively ulcerated, and its coats at one point perforated, over which was effused a patch of greenish lymph, preventing the escape of matter into the peritoneal cavity. Occasionally

the mucous membrane of the lower portions of the ileum and cœcum become congested, softened, and ulcerated in this disease, but in a large majority of cases it is healthy.

In Case 18, the patient, a female, had suffered from protracted dysentry and diarrhœa, although ulcerative perforation of the appendix was the immediate cause of death. The coats of the cœcum were attenuated, thin, diaphanous, without a trace of ulceration, its mucous and muscular coats atrophied, the serous coat apparently only remaining.

Dr. Burne *(Med. Chir. Trans.*, vol. 22, p. 43,*)* has recorded the history and post mortem appearances of a case of hypertrophied appendix which seemed to be the cause of fatal peritonitis. The appendix, covered with concrete lymph, was several times its natural bulk, and consisted chiefly of a deposition between the serous and mucous coats, by which the intervening coats were converted into a dense compact tissue. Its canal was pervious and mucous membrane sound. The meso-appendix was loaded with adipose substance. The same diseased condition existed for a considerable distance around the mouth of the appendix, which was much thickened, and its calibre proportionably diminished. The ileo-cœcal valve was, to a great extent, obliterated by the extension of the hypertrophy in this direction.

The appendix vermiformis, like all the other viscera, may be the seat of tubercular deposition, Voz (*Gazette Médicale*) observed it in the appendix of two patients, dead of phthisis pulmonalis.

SYMPTOMS.

The premonitory symptoms of this disease are inconstant and equivocal. When present the patient is heard to complain of a deeply seated uneasiness in, or occasional darting pains through, the right side. In some instances the patient has been subject to attacks of colicky pain in the abdomen.

The final attack is usually ushered in by pain, more or less severe, in the lower portion of the abdomen, about the umbilicus, or in the right iliac region; in rare instances vomiting and diarrhœa attend the pains. The pains at first are regarded as nothing more serious than colic pains, from which the action of a mild purgative frequently gives temporary or partial relief.

The relief is but temporary, for soon the pain returns, with increased intensity, accompanied with a severe rigor, or a succession of lighter chills, and attended with febrile reaction, great restlessness, and extreme prostration. The skin be-

comes hot and dry, the pulse increased in force and frequency, the tongue covered with a white or brown fur; great thirst, irritable stomach, scanty secretions, the bowels sluggish, or obstinately constipated, and, in rare instances, diarrhœa. As the disease progresses the patient will generally be found lying upon the back, inclining to the right side. The pain becomes deeply seated and fixed in the right side, greatly aggravated by any attempt to move, frequently shooting down the right thigh, causing retraction of the testicle, priapism, and in some instances both rectal and vesical tenesmus. At this stage of the disease, if the abdomen be carefully inspected, the right iliac region presents an unnatural fullness, and examination detects, in some cases, a diffuse resistance; in others, a deeply seated circumscribed tumor can be distinctly traced in the right iliac fossa, or ileo-lumbar region.

In the advanced stage of the disease the pain becomes general, the whole abdomen tender and tympanitic, the legs drawn up, the respiration hurried, with dyspnœa; distressing vomiting supervenes with ejection of bilious or stercoraceous matter, and there is hiccough with occasional delirium. The pulse is small and frequent, the countenance pinched and anxious; there is extreme prostration and restlessness, the extremities cold and covered with a clammy perspiration, and death follows with the symptoms of general peritonitis or collapse.

The different stages of the disease are not, in every case, well marked; one stage follows another with amazing rapidity, and death surprises both friends and physicians.

When an ulcerated appendix suddenly gives way, no adhesions having been formed to circumscribe its contents, the case is characterized as one of perforation of the intestines. In cases of this kind, the patient may never rally from the shock caused by the effusion of the contents of the bowel into the peritoneal cavity, but sink in a few hours with the symptoms of collapse, as in Case 26.

Perhaps a brief view of some of the more important symptoms may enable us to determine with greater accuracy the import of each:

Pain, which is always earlier or later present in this disease, is not, as would naturally be inferred, invariably located, at first, in the immediate vicinity of the cœcum. In fourteen cases, the premonitory symptoms are reported to have been colicky pains in some portion of the abdomen, which,

however, as the disease progressed, became deeply seated and fixed in the right iliac region.

In fifteen of the cases, pains originating in the right iliac region, and varying in intensity, sometimes a slight uneasiness and occasional darting pain was felt, while in other cases, pains of a more constant, acute, and severe character, preceded the final development of the disease, for a period of time varying from a few hours to as many days or weeks. The umbilicus was the seat of pain in three cases. In three instances pain extended down the right groin and thigh.

In two cases the disease was ushered in by an unaccountably strange feeling of lassitude and restlessness, followed by febrile reaction, before any local symptoms were developed.

Vomiting, when it occurs as an early symptom, is generally caused by an overloaded stomach; later in the disease it is a symptom of peritonitis. Dark bilious matters are ejected, but in one instance it had a stercoraceous character.

Diarrhœa was present in the early stage of six cases, in three of which it continued during its progress, while in the others it ceased, and was followed by obstinate constipation.

Tumor.—It is definitely stated only of six cases, that a well-defined, circumscribed tumor was detected during the patient's life, while in others an unnatural fullness, a diffuse resistance in the right iliac region was observed, and invariably attended with exquisite tenderness and great pain on pressure.

Had the nature of these cases been more clearly apprehended, probably more satisfactory evidences of their real pathological condition would have been obtained; although it must be acknowledged that, in a considerable number of cases, the onset of the disease is so violent, and the supervention of general peritonitis so rapid that its local and distinctive character is lost.

Circumscribed abscess of the appendix, when present, is a diagnostic mark of much value, and is within the peritoneal cavity; while that of the cœcum is without, and is not attended with pain so acute, or tenderness so exquisite.

Dr. John Burne, in his able paper on tuphlo enteritis, (*Med. Chir. Trans.*, vol. xx., p. 67), enumerating the symptoms which lead us to suspect this disease, lays stress upon the constant presence of circumscribed inflammation, and abscess in the right ileo-inguinal region. Amongst the symptoms which should lead us to suspect this, he mentions

"tension in the right ileo-inguinal region, there being always circumscribed peritonitis, and abscess within the peritoneum." In his next paragraph, his language is as follows: "the peritonitis, excited at the moment of the perforation of the appendix will not unfrequently spread rapidly and universally over the peritoneum, and destroy life in from twelve to twenty-four hours."

It is impossible for both of the above statements to be true; for when inflammation spreads rapidly and universally over the peritoneum, it cannot, strictly speaking, be called circumscribed, unless it be meant that it is limited to the entire peritoneal cavity; moreover, when the violence of inflammation is so great as to cause death in from twelve to twenty-four hours, the period to us would seem brief for the formation of circumscribed abscess.

The result of our researches, so far as observation and post mortem appearances are recorded, go to show that, in a majority of cases, peritoneal inflammation, symptomatic of perforative ulceration of the appendix is not circumscribed, and a well-defined tumor does not uniformly exist in the ileo-lumbar region; although inflammation does exist in its greatest intensity in this region, giving rise to unnatural fullness and tension.

Our researches also confirm the statement made by Dr. Burger, (*Lond. Med. Times*, 1814,) "that if a patient with this disease lives beyond the sixth or eighth day, a circumscribed tumor can be detected in the right iliac fossa, for in every instance in which it has been recorded that a tumor existed, the disease has been of several days standing.

Peritonitis caused by the effusion of the contents of a diseased appendix into the abdominal cavity, nature having interposed no barrier to prevent its disastrous results, has nothing except the locality of its origin to distinguish it from peritonitis caused by intestinal perforation from other causes. Abscess of the cœcum also has many symptoms in common with disease of the appendix, such as pain, tenderness, and tumor in the right iliac fossa.

When catarrhal inflammation, from the lodgment of foreign bodies, indigestible substances, or any cause not explained, is set up in the cœcum, it is accompanied by functional derangement of the bowels and diarrhœa. Diarrhœa, mostly mucus, sometimes streaked with blood and pus, which pretty uniformly accompanies the catarrhal, and ulcerative inflammation, preceding cœcal abscess, is rarely

present when the appendix is the seat of disease. When perforation of the cœcum occurs, causing abscess, it is usually at its posterior portion, where it is destitute of its peritoneal covering, deep in the iliac fossa, and once having taken place, its progress is slow. It may be distinguished from perforation of the appendix by the generally less violent character of the symptoms which attend it.

Its progress is less rapid, the pulse has not the firm, wiry, and irritable feel, and there is not that distress and anxiety depicted in the countenance which characterizes the march of serous inflammation to its fatal termination.

DIAGNOSIS.

Owing to the proximity of the appendix vermiformis, to other and more important organs, and to our entire ignorance of its function, which, if interrupted, gives rise to no symptom *sui generis*, a deferential diagnosis is always difficult, and often impossible. This embarrassment is increased by a fact stated in our foregoing observations, viz., that the mucous membrane of the appendix, like that of the intestines generally, is endowed with an organic sensibility which tolerates the presence of substances, in consequence of which a foreign body may remain in it for an indefinite period of time, without producing any pathological change. It is probable, also, that catarrhal inflammation, and even ulceration of its mucous coats, may exist indefinitely, without giving rise to any serious symptom; nor is there evidence that the presence of foreign bodies in the appendix ever do, except in rare instances, give rise to alarming symptoms before the peritoneum is involved.

The diseases with which it is most likely to be confounded are general peritonitis, cœcal abscess, fæcal impaction of the cœcum, lumbar abscess, hernia, and ovarian tumor.

Like general peritonitis, it commences with abdominal pain, or rigor or succession of chills, followed by febrile reaction, vomiting, etc. Its more local character; the extreme tenderness, on pressure, of the right side; the deeply seated pain in the right iliac fossa; radiating, when the disease is not circumscribed, over the entire abdomen, and when circumscribed, the increased fullness; the diffuse resistance; the well-defined tumor, serve more strongly to mark the diagnosis between idiopathic peritonitis, and that symptomatic of disease of the appendix vermiformis.

Impaction of the cœcum with fæcal accumulation, also like disease of the appendix, is attended with constipation,

pain, and tumefaction of the right iliac region. The action of cathartic medicine relieves the pain, removes the tumefaction, and restores the patient, in the former case; while, in the latter, notwithstanding that the constipation is removed, the symptoms continue with increased urgency.

An attentive consideration of the history of the case, will prevent the confounding of abscess of the appendix with lumbar abscess. The formation of lumbar abscess is slow, and occurs in strumous habits; while the former is rapid, and more generally developed in sound constitutions. Dull, heavy pains, long-continued in the lumbar region, precede the former; acute, intermitting, abdominal pains are the harbingers which usher in the development of the latter. Lumbar abscess, having formed, points below Poupart's ligament, in the groin or about some portion of the thigh; abscess of the appendix makes its way to the surface, direct through the iliac region, or works its way upwards, pointing in the ilio-lumbar region; or finally opens into the intestine, discharging its contents through the bowels, per anus.

It is scarcely possible for the ordinary superficial, hernial, tumor, situated in the abdominal parieties, to be mistaken for the deeply-seated tumor formed by a diseased appendix vermiformis, unless the appendix itself becomes the subject of hernia, and ulcerates, forming abscess in the inguinal canal, as in Cases 13 and 28. When it does form the contents of inguinal hernia, it usually is much hypertrophied, and, if examination be made, the sensation communicated to the finger is like that of a cord which can be traced along the course of the inguinal canal.

When ulceration has taken place, and abscess formed, the cellular tissue around is in a thickened and inflamed condition; the tumor presented is not elastic like—that of hernia, coughing does not advance it, nor does it recede when the patient is placed in the recumbent posture, and pressure applied.

The history of the case, vaginal and rectal examinations, will distinguish it from ovarian disease.

PROGNOSIS.

The prognosis is always unfavorable. Of the numerous cases related to us by neighboring practitioners, which are not reported in the medical journals, none recovered. Of the recorded cases which have fallen under our notice, in which disease of the appendix vermiformis was suspected, only three recovered. One case (No. 13) of hernia of the

appendix, the diagnosis of which during life, was not clearly made out, recovered. The patient shortly after fell a victim to another fatal disease when an autopsy conclusively revealed the nature of his former trouble.

CAUSES.

The causes of this disease are of two kinds—predisposing and exciting. From an examination of the appendix cœci of a considerable number of subjects, with reference to its relations to the caput coli and ileum, no variation was noticed in any instance. In length and calibre, however, a marked difference was observed. In some cases, its cœcal opening was much larger, more patulous and open than in others. The mode adopted for accurately noting variations in calibre, was by the introduction of rectal tubes of different sizes. It was ascertained that, while some readily received a full-sized rectal tube a half inch in diameter, others would receive one only one-fourth of an inch in diameter—a greater disparity in size than we had anticipated. Whether size was a predisposing cause in any cases of disease of the appendix reported, we have no means of knowing, as examination of this point appears to have been overlooked; but, from our own observations, we think it may safely be set down as a predisposing cause.

The immediate or exciting causes of this disease are foreign substances which have made their way into the appendix vermiformis, a great variety of which have been found. They vary in dimensions from the size of a tomato seed to that of a nutmeg. Most frequently of all, are found indurated fæcal masses, sometimes having a nucleus of a different character, around which it has accumulated in irregular form; sometimes it is arranged in regular and concentric laminæ; and more rarely it is incrusted with a calcareous deposit. Next in order of frequency are found intestinal, biliary, or calcareous concretions. Residuary alimentary substances—beans, tomato, grape, and raisin seeds, cherry-stones, all have found a lodgment in this apparently insignificant reservoir, and been productive of fatal results. In one case, it was a substance resembling old cheese; a bit of hazle-nut shell was the offending cause in another case; a triangular bit of bone was discharged from the appendix in one instance which had been the subject of hernia—abscess having formed in the inguinal canal. Of metallic substances, robin-shot were found, which, however, had produced no pathological changes. In one case a nail, in another a pin incrusted with

a calcareous deposit, was the cause of ulceration, and in a third, the offending cause was a bristle, apparently from a tooth-brush. The irritation caused by the lodgment of ascarides in the appendix have, in some cases, been the producing cause of ulceration. In one instance (Case 31), the whole of a large lumbricus, except an inch of its tail, which remained in the cœcum, had forced itself into the appendix, giving it the appearance of a large cord. The appendix in this case was not ulcerated, although it was regarded as the immediate cause of death by the physicians in attendance. In consideration of its unique character we have put it in tabular form. In another instance (Case 46), in which the ulceration of the appendix was the cause of death, forty-seven lumbricoid worms, both great and small, were found in the peritoneal cavity.

Its development in several instances seemed to be induced by overloading the stomach. In two cases, cause and effect were apparently so striking that they could not fail to elicit attention. The first (Case 22), a child eleven years of age, having eaten a large quantity of plums, and swallowed the stones, was taken immediately with vomiting and pain in the bowels. The second (Case 23), a child twelve years of age, the day before the attack, ate more than two quarts of blackberries. Both died of this disease, and in each case a calculous was found in the appendix. In one case, a large quantity of cranberries had been eaten, and, in still another, colicky pains followed the eating of a large piece of cocoa-nut, two days before the disease was developed.

Perhaps the above facts were merely coincidences, having no influence in hastening the development of the disease; but, as in every case, the attack was associated, by the physician in attendance, with the substances eaten, we think them of sufficient interest to notice in this connection. In one case, its development was attributed to a blow upon the lower portion of the abdomen, after which the patient was never free from pain in this locality. In another case, the patient had a fall upon the stomach a few days preceding the attack.

Dr. Copland refers to a case of ulcerated appendix, which apparently resulted from the pressure of a truss bandage worn for hernia.

Dr. Watson, in his work on the pathology and practice of medicine, states that he "has known perforation of the appendix to happen from the specific ulceration of continued fever.

DURATION.

In our foregoing remarks, we have stated that the duration of this disease is not uniform; that it varies from a period of a few hours, to that of weeks or even months. Of the thirty-four cases, whose duration we have data for accurately determining, two died, collapsed, in a few hours after the supervention of violent symptoms; 1 lived twenty-four hours; 4 lived two days; 5, three days; 6, four days; 3, five days; 2, six days; 3, seven days; 3, eight days; 1, ten days; 1, twelve days; 1, sixteen days; 1, twenty-one days. The patient (Case 12), lived four months after a tumor was discovered in the right iliac region, and seven weeks after it discharged at the umbilicus. The most remarkable instance of the long continuance of this disease, is that reported by Dr. J. M. Warren, in which the patient lived four years after there were marked evidences of disease in the neighborhood of the appendix cœci. The duration of the disease in the two cases of hernia of the appendix, and abscess in the inguinal canal, was respectively seventy days and, twelve months.

TERMINATION.

An attentive consideration of the foregoing observations, or a cursory review of the tabulated cases, will show that, fatal peritonitis, caused by the escape of foreign matters into the abdominal cavity, through a perforated appendix vermiformis, terminates the life of a large proportion of patients suffering from this disease, within five days after the manifestation of severe symptoms. When, however, the inflammation is local, and circumscribed abscess forms, its locality will be determined by the position of the appendix. If it turns outward and upwards around the caput coli, extending along the outer side of the colon, abscess will be situated in the iliac or ilio-lumbar region; if it depends from the cœcum its locality will be in the inguinal region or pelvic cavity. When it is directed anteriorly, and upwards, in contact with the abdominal parieties, abscess may point and discharge at the umbilicus, as in Case 12; or if, as is usually the case, the appendix be coiled up under the caput coli, its seat will be deep in the iliac fossa; and if in contact with the cœcum, its coats may be perforated, giving exit to its contents through the large intestines. A case of this description is reported by Dr. Burne. We have not deemed it proper to put the case in tabular form, as its favorable termination prevented the verification of his diagnosis by an autopsy,

although the case was one in which the features of this disease were strongly marked. Abscess having formed in any one of the above named localities, or in the inguinal canal, and found its way to the surface, the patient may die exhausted, from the profuse and long-continued discharge, as in Cases 28 and 12, or, if the powers of the system endure, it may heal, the appendix becoming partially or entirely shriveled, forming a ligamentous cord, as in Case 13.

It seems to us that the iliac fossa is, of all the localities enumerated, the one most liable to the formation of this abscess, and its discharge into the cœcum is unquestionably its most favorable termination.

TREATMENT.

The results of treatment of diseases of the appendix vermiformis, have usually, been in the highest degree unsatisfactory, owing to the highly organized character of the peritoneal covering, and the proneness of inflammation, originating in a single point to extend over its entire surface. General peritonitis arising from perforative ulceration of the appendix is always intensely violent, hastening with wonderful rapidity to its fatal end. Indeed we are not conversant with the records of a single well-authenticated case of general peritonitis from this cause, the progress of which has been arrested by treatment, or permanent relief obtained, until death terminated the sufferings of the unhappy victim.

The indications of treatment are the same as in peritonitis generally, except the symptoms should be met with more prompt, and vigorous measures, viz.: general and local depletion, the free use of anodynes combined with calomel, warm fomentations, poultices, counterirritation, etc. When the inflammation is circumscribed, or abscess forms, the same unfavorable termination does not always follow. In the early stage of this form of the disease, the indications are to moderate the local inflammation, and prevent, if possible, the entire peritoneum from becoming involved. These indications are fulfilled by the free use of leeches; the application of warm fomentations, poultices, and counterirritation over the seat of the disease. The general irritability of the system, and local pain should be controlled by the use of anodyne in the form of Dovers' powder, or opium, or morphine, and the moderate use of mercurials, mild laxatives, or enema, will be necessary to overcome the constipation; but the use of drastic purgatives should be avoided.

The progress of the abscess should be narrowly watched,

and frequent examinations made, care being taken not to give unnecessary pain, with a view to ascertain the course indicated by nature, for the discharge of its contents. If the tumor remain deeply seated, and is in close proximity with the cœcum or intestines, their coats may be perforated and its contents be discharged per anum. When this favorable result is attained it is indicated by the subsidence of the tumor, and the presence of diarrhœa, having pus mingled in the discharges. If the abscess breaks into the abdominal cavity, no human sagacity can avert the patient's doom.

When the abscess points to the surface through the abdominal parieties, a question of much importance arises, viz.: the propriety of making a free incision down upon the tumor, thus giving exit to its contents. We are not aware that the history of recorded cases, with a single exception, reflects any light upon this point, which can aid us with regard to determining the utility of this mode of precedure. There are considerations which would seem to justify, or even favor it. The first that occurs to us in its justification is, the inevitable certainty of death, unless the patient be speedily relieved, the operation does not make death more sure. The second, is the universally recognized physiological law which determines all suppurating abscesses to the surface. The third, is the success, which has of late, followed operations, for the removal of ovarian tumors, situated in the abdomen, and the opening of abscesses in other portions of the abdominal cavity. These reflections incline us to favor this mode of treatment. The favorable issue of a single case, and this, so far as our information extends, the only one on record in which this practice was adopted, taken in conjunction with what we have just stated, if they do not conclusively settle the utility of this mode of procedure, at least justify a more extended trial of it.

The case to which we refer was related to the Medical Society of London, in 1848, and first made its appearance in the *Lond. Med. Gazette*, and afterwards, in this country, it appeared in the *Amer. Jour. of Med. Sciences*, 1849. It is a case of unusual interest, and bears directly on the point in question, which is sufficient excuse for giving some of its more important features in detail. The patient in whom it occurred, was a married lady, 30 years of age, of delicate constitution, in her fifth pregnancy. Her pregnancies had been attended with violent and distressing sickness, which the ordinary remedies failed to relieve. On the 3rd of April,

after riding, she experienced an unusual dragging pain in her right side, which confined her to bed, and required the use of opiates. On the 7th, she was suddenly seized with labor, and delivered six weeks before her full time. On the 8th day after delivery, while turning in bed, she felt a severe pain in the right inguinal region, which she described to be as though something had snapped asunder, and from that time, suffered much in the whole inguinal region; pulse 90; no great tenderness on pressure; the use of opiates was required to relieve the pain. April 10th.—Pain more acute; a slight, hard swelling was distinctly traceable high in the inguinal region. Treatment,—bowels relieved by enema, six leeches were applied over the seat of pain and tumor, and followed by warm fomentations. 11th.—Continues same; applied blister. 13th.—Cord-like swelling more distinctly felt; pain extending over the abdomen. 14th.—Tongue brown; pulse 90; bowels constipated; ordered calomel 6 grs. to be administered immediately, and followed by 3 grs. every two hours, until 12 grs. were taken. 15th.—Pain intense in right inguinal region; bowels tympanitic and tender on pressure. 17th.—Much worse; countenance anxious, features pinched; pulse intermitting and rapid; sickness very troublesome; tongue brown in the centre; skin cold and clammy; complains of great pains and rigors, which were so frequent and violent as to prevent sleep. At this stage of the disease an examination was made, when the cord-like swelling in the inguinal region was more apparent. It was now determined by the three physicians in attendance, as the patient was rapidly sinking, to make an incision down upon the tumor, so as to give exit to the matter, if, as was supposed, it had collected in the right iliac fossa.

The patient was put under the influence of chloroform, and an incision about four inches long made inwards from the spine of the ilium, above Poupart's ligament, but as close to it as possible. Upon opening the abdomen, a quantity of excessively offensive, turbid serum, with fibrinous flocculi, poured out, mixed with air globules, and also patches of false membrane. She was directed to be turned upon her side, that the discharge might freely escape; a poultice to be applied, and to take an opiate.

18th.—Better, had a more quiet night. May 1st.—The patient has continued to improve moderately to date, on the use of anodynes and nourishment. To-day is not so well, suffers great pain about the wound, which is inflamed, and

the edges sloughy; ordered warm fomentations to the abdomen. 2nd.—Pain continues about the wound; discharge thinner, greenish, and very offensive. Upon carefully examining the wound, a small, round, ball of fæcal matter, surrounded by calcareous deposit, was discovered, and upon further examination, a second piece excavated on one side, evidently forming a cup for the former, and which, from their size, were judged to have been impacted in, and escaped by ulceration from the appendix vermiformis. From this time, the patient convalesced until recovery was complete.

The history of this is satisfactory evidence to us that it was a case of abscess of the appendix with local peritoneal, inflammation.

If it was not a case of the disease in question, it was a case of fæcal abscess resulting from perforation of the intestine, and argues strongly in favor of a trial of the mode of treatment which we propose. If resorted to at all, the opening should be made early. If the symptoms are urgent and threatening, it must not be delayed on account of the absence of fluctuation. In the case, an abstract of which we have given, there was no fluctuation; nothing could be detected but the presence of a hard tumor in the inguinal region.

After the abscess has discharged, the system must be supported by nutritious diet and tonics.

CONCLUSION.

So far as we have been able, by the records of cases, to determine the ages of patients suffering from this disease, they are as follows:—Under five years of age, 4; between five and ten years, 2; between ten and twenty, 13; between twenty and thirty, 6; between thirty and forty, 3; between forty and fifty, 4; between fifty and sixty, 3; aged, 1; elderly, 1; young, 2.

Only eight of forty-four patients, whose sex was named, were females, two of which were in the puerperal state at the time of the development of the disease.

Of eighteen, it is recorded that their constitutions were good, and in seven that they were delicate.

A large proportion of patients suffering from this disease die young before they enter upon the active duties of life, consequently the occupations, of comparatively a small number are stated.

So far as they were noted they are as follows:—journey-

man potter, 1; weaver, 1; shoemaker, 1; laborers, 2; artilleryman, 1; soldier, 1; waterman, 1; merchant 1; clergyman, 1; physician, 1.

We may draw the following conclusions, viz.: that neither age, sex, constitution, occupation or condition in life can exempt from the liability to this disease. Infancy, youth, manhood, age, are alike, although, not with equal frequency, the victims of this relentless disease. It will be observed according to our statement that at least one half of the patients suffering of disease of the appendicula vermiformis die under twenty years of age. Why infancy and youth are the favorite victims of this disease, no evident reason can be assigned.

Another fact in equal obscurity, and for which we can offer no explanation, is its more frequent occurrence in the male sex, the proportion being a little more than four-fifths.

From the foregoing facts, we conclude that the hardy and robust are more frequently subject to this affection than those possessed of a frail and delicate organization, and also those in the higher walks of life equally liable to its attack with those occupying a more humble position.

The results of analysis of concretions and calculi found in the appendix cœci, so far as any have been made, are as follows, viz.: inspicated mucus, chrystalizable fatty matters, cholesterine, carbonate, phosphate, and oxilate of lime, ammonia, phosphate of magnesia, and chloride of soda. Mons. Voz observed a brownish grey calculi, which when removed, was readily moulded by the fingers; but when dry, became brittle, and was arranged in concentric laminæ of varying colors. Dr. Barry observed one the size of a horse-bean, which was pultaceous when removed, but after a few minutes exposure to the air, became dry, hard, and rattled when thrown upon a plate. Dr. Blackadder noticed a concretion, the surface of which was a greyish earthly-looking crust, while its nucleus resembled a ball formed of ligneous fibres.

NO. SEX. AGE. OCCUP. CONSTI.	PRIMARY SYMPTOMS.	PROGRESS OF CASE.	RESULT.	AUTOPSY.	AUTHORITY.
1. F. æt. 19,..healthy.	Severe pain in right inguinal region four days.	5th day:-pain continued; great tenderness over cœcum, extending to right hypochondrium; vomiting: legs drawn up. 9th—fullness in iliac region marked. 10th—fluctuation in right iliac region; incision gave exit to pus and gas, etc.	Died on the 10th day of attack.	Viscera healthy on left side; abscess in right, iliac and lumbar region bounded by cœcum, colon, right lobe of liver. Blind extremity A. V. sloughed away. remaining portion containing fluid fæces.	JOHN BURNE, *Med. Chir. Trans.*, vol. XX.
2. F. Young.....	Pain in abdomen and vomiting at evening.	2nd day:—symptoms of well-marked peritonitis; pain extending down right thigh.	Died after illness of two days.	General and violent peritonitis vermiform process, contained hard compact cinnamon-colored concretion. Blind extremity ulcerated.	DR. LAW, *Dublin Med. Jour.*, 1840.
3. M. æt. 5.	Declining health for some time.	Sudden vomiting, great prostration; abdomen tumid, painful on pressure; countenance pinched; pulse thready; extreme restlessness; delirium.	Died 2 days after supervention of violent symptoms.	General peritonitis at one inch from cœcal extremity, filled with fæces; blind extremity ulcerated.	JOHN PARKINSON, *Med. Chir. Trans.*, vol. 3.
4. M. æt. 19, good.....	Slight colicky pains; nausea; skin sallow; bowels constipated.	2nd day:—slight chill; restlessness, painful sensation of abdomen. 3rd day:—pulse rapid, small; skin cold, clammy; abdomen tympanitic, tender; with symptoms of collapse.	Died on 4th day.	Effusion of lymph near cœcum, A.V. containing concretions of animal fibre and fæcal matter; walls opposite concretion perforated by slough.	DR. METCALFE, *N. Y. Med. Times*, Oct., 1855.
5.	Pain in right hypochondrium extending to loins, increased by full inspiration	Pain increased; prolonged rigor; high fever; bowels tympanitic, and tender on pressure; great depression; pain running down right thigh; retraction of testicle.	Died.	General peritonitis, A. V. thickened, containing concretion of indurated fæcal and animal matter, causing abscess.	SIR HENRY MARSH, *Dublin Med. Jour.*, 1855.
6. M. æt. 57, coachman.	Feverish action, succeeded by vomiting; obstinate constipation.	2nd week:—pain in ilio-inguinal region; constipation; circumscribed, hard deeply-seated tumor, size of small orange, in right inguinal region.	Died after illness of three weeks.	Circumscribed abscess between cœcum and iliacus internus muscle; A. V. one inch long, terminating in abscess of blind extremity, sloughed away.	DR. JOHN BURNE, *Med. Chir. Trans.*, vol. XX.
7. M. æt. 12	Attacked suddenly; deeply seated, fixed, pain in right, ilio-inguinal region.	Rigor; fever; vomiting; abdomen. tense and tender; symptoms general peritonitis.	Died 2 days from attack.	General peritonitis; perforating ulcer of A. V. in which was concretion size of cherry stone.	*Idem.*
8.	.....	Symptoms of general peritonitis.	Died.	Perforating ulcer, appendix vermiformis.	DR. LAW, *Dublin Med. Jour.*, 1840.

9.	M. æt. 52, journeyman potter.	Restlessness; sleepless and feverish at night.	2nd day :—rigor, reaction with delirium. 3rd day :—worse; pain in ileo-cœcal region, below ileo-cœcal valve, darting down to orifice of urethra, and along rectum to anus; countenance anxious: bowels constipated; tenderness over right iliac region, extending to left side. 4th day:—worse. 5th day;—symptoms greatly aggravated; vomiting increased and stercoraceous.	Died on 6th day from attack	General peritonitis; viscera covered with lymph; pus; A. V. 3 inches from junction of cœcum, more than inch in diameter, containing large calculous concretion; currant, and tomato seeds weight of calculous dragged appendix down into pelvis; resting against left side fundus of bladder.	Dr. J. F. Preeles, *Am. Jour. M. Sci.*, for 1843.
10.	F. æt. 14, delicate ..	Occasional shooting pains in right side.	Seized suddenly with pain in bowels, and vomiting bilious matter; obstinate constipation. 4th:—lying on back inclining to right side; knees drawn up; countenance cadaverous; collapse; tenderness in right iliac region.	Death middle of 5th day.	Intestines glued together; A. V. bound down by adhesions; perforating ulcer of appendix, which contained concretion moderatly hard, and size olive stone.	Dr. Hartshorne, *Trans. Coll. Phys. Surg, Philadelph*, vol. 1. n.s.
11.	F. æt. 45, mother 7 children, good.....	Uneasy sensation in right iliac region for month; obstinate constipation.	Sudden pain in right iliac region; great prostration. 2nd day :—pulse 130; features sunken; bowels constipated: abdomen tympanitic; extreme pain about umbilicus, and great tenderness in iliac Fossa; collapse.	Died on the morning of the third day.	General peritonitis; small intestines in right iliac region united to each other; effusion purulent; in blind extremity A. V. grape seed impacted in indurated fæces; mucous membrane of A. V. gangrenous.	Dr. Pepper, *Sum. Trans. Coll. Phys. Surg, Phila.*
12.	M. æt. 22, weaver..	Pain for 6 mos. in lower part of abdomen following a blow; gradually increasing in severity.	Pain more violent; tumor in right inguinal region just above Poupart's ligament; abdomen tender on pressure; bowels open; tumor finally burst at umbilicus; discharged thin fæcal matter.	Died 7 weeks after opening of abscess; 4 months after discovery of tumor, 10 months after reception of blows.	Ileum and cœcum much thickened from old inflammation; A. V. bent upward, thickened, dilated, adherent to antabdominal parieties; forming sinus from cœcum to within inch of umbilicus.	*Med. Examiner*, vol. 3. p. 580.
13.	M. æt. 56, clergyman.	Formerly subject to what seemed incipient rupture; wore truss long time; increased swelling in situation of rupture.	Tumor, size of hen's egg, pyramidal in form, situated in ext. abdominal ring; bowels regular; uneasy sensation in tumor after taxis. 4th day of treatment tumor;—extending rapidly. 20th day:—rigor; tumor size 2 fists; fluctuation. 24th day :—size increased, opened with relief. 34th day :—second tumor lower down; lanced. 59th day;—discharged small triangular bit of bone; tumor rapidly disappearing.	Recovery complete after 70 days' illness; died with another disease in one month.	A. V. twice usual length and thrice ordinary size; tunics thickened; $\frac{1}{4}$ths A. V., in inguinal canal; adherent to bottom of canal, which had been seat of hernia.	John Thurnam, *Prov. Med. Jour.*, 1848, p. 475.
14.	M. æt. 18, shoemaker, good. -----------	Severe sharp pain over entire abdomen, vomiting; diarrhœa; pain increasing.	3rd day :—pain constant with occasional exacerbation; aggravated by motion or pressure; most severe in right hypogastrium; vomiting green matter; bowels constipated; breathing thoracic, lies on back; knees drawn up; tympanitis.	Died four days from attack.	General peritonitis; adhesions; A.V. dark; coats thickened; containing brown, gritty, concretion, size of bean; having nucleus, surrounded with fæcal matter; two perforations with rounded edges.	*London Lancet*, 1841—2, vol. 2.

15.	M. æt. 10, good.....	Slight pain in right iliac region, two days.	3rd day:—bowels very tense; painful on pressure, in right iliac region; stools natural in appearance; the pulse 121, small; countenance anxious; vomiting; tympanitis.	Died on 5th day from the attack.	Marks of violent general peritonitis, most intense in region of cœcum; A. V. gangrenous, containing portion indurate fæcal matter, size of cherry-stone.	*Lon. Lancet*, 1833 and '4, p. 856.
16.	M. æt. 14, delicate..	Taken with vomiting after unusually severe exercise.	Bowels open; tender on pressure; at evening, symptoms—peritonitis, pain greatest in right iliac region.	Died two days from attack.	General peritonitis; A. V. adherent; gangrenous; distended, with portion indurated fæcal matter.	*Ibid.*
17.	M. æt. 46, physician, good-----	-----	-----	Died.	A. V. obstructed by body, size and shape of bean; blind extremity perforated and opening into fæcal abscess.	*N. Y. Annalist*, Sept. 1847.
18.	F. æt. 25, single.....	Diarrhœa from Jan. to Nov.; emaciated; hectic; at times colicky pains in right iliac region.	1st Nov.:—diarrhœa; in Dec. and Jan. gradually improving; in Feb. well; March 2nd, diarrhœa; vomiting; abdomen distended; tender on pressure; countenance anxious.	Died 14 months after first, and two days from second, attack.	General peritonitis; A. V. perforation, size goose quill; filled with pulpy fluid matter.	*Boston Med. Journal*, 1847.
19.	F. æt. 22, parturient, good-----	Obstinate constipation during pregnancy.	1st day after delivery:—chills; pulse 130; deeply seated; diffuse resistance in right iliac fossa; tender; at times very painful. 3rd day:—circumscribed tumor. 5th day:—chills; tumor size of fist; obscure fluctuation; abdomen tympanitic. 6th day:—tumor no longer circumscribed. 7th day:—countenance anxious; thigh moderately flexed; chills and vomiting. 8th day:—acute pain in right iliac fossa and lumbar regions.	Died 8 days from attack.	Abscess size of small orange, containing pus and fæces; A. V. beneath internal walls of abscess; open, black, friable, gangrenous; muscles in iliac and lumbar regions softened; no perforation of cœcum; intestinal tube and viscera healthy.	*N. Y. Jour. Med. and Surgery*, 1840, vol. 2.
20.	M. æt. 36, merchant,	Sharp pain in right side, extending up to false ribs; bowels constipated; vomiting.	2nd day:—sudden, intense pain in right iliac region, extending under false ribs; sensation of something giving way inside; symptoms of general peritonitis.	Died.	General peritonitis; A. V. extensively ulcerated and destroyed; containing substance resembling old cheese; cœcum perforated in two places.	Dr. F. M. Robertson, *Charleston Med. Journal*, vol. 4.
21.	-----	-----	Symptoms; — peritonitis, constipation, etc.	Died in 5 days.	Traces of general peritonitis; A. V. contained two concretions resembling mortar in appearance.	Dr. Crisp, *Lon. Med. Times*, 1852.
22.	M. æt. 11.....	Ate plums, swallowing stones; soon seized with pain in abdomen and vomiting.	2nd day:—pain increased; abdomen tumid; very tender on pressure; vomiting frequent; bowels constipated. 3rd day:—pain ceased; collapse.	Died on 2nd day from the attack.	Peritonitis; A. V. gangrenous; perforating ulcer, inch from apex; nearer cœcum, grayish, oblong calculus, ¾ inch in length.	Dr. W. C. Worthington, *Provincial Med. Jour.* vol. 6, p. 30.
23.	M. æt. 12.....	Vomiting; eaten day before more than a quart of blackberries.	2nd day:—symptoms peritonitis; tympanitis; tenderness in right hypochondrium; pulse 130; vomiting; constipation; extremities cold.	Died three days from attack.	A. V. covered with dark ulceration; perforation, size of pea, near blind extremity; towards cœcal extremity was impacted; soft calculus, size of horse bean.	Dr. G. Barry, *Provincial Med. Jour.* 1845, p. 603

24.	F. æt. 12,	Vomiting and purging; apparent recovery in 2 days.	Pain and bilious vomiting; tenderness in right iliac region; becoming general; tympanitis.	Died after three days' sickness.	Acute peritonitis; A. V. perforated by irregular, jagged ulceration; containing concretion size of hazel nut of fæcal matter.	Mr. Marshall, *Lon. Med. Times*, vol. XX, 1849.
25.	æt. 2, good	Complaining week before attack; tenesmus; remaining long at stool.	8th day:—face suddenly became pale; skin cold; pulse nearly extinct; sank rapidly.	Died in few hours.	A. V. diffluent, broken down; calibre filled by calcareous-looking concretions.	Dr. Holmes, *Lon. Med. Times*, vol. XVI., 1847.
26.	M. æt. 26, waterman, good	Pain in bowels for a few weeks; diarrhœa with distressing tenesmus.	Sudden, severe pain in abdomen; countenance anxious; moaning; abdomen tense; deeply-seated pain about umbilicus; pressure on right iliac, and lumbar regions painful; constipation; sinking.	Died 6 days after supervention of severe sympt's.	Peritonitis; A. V. greatly enlarged, with perforating ulcer large enough to admit little finger, ¾ inch from cœcal extremity; opening into A. V. defective.	Dr. Luke, *Dub. Med. Press*, vol. XXVI., 1851.
27.	F. æt. 18, bad	General health suffering from intemperate habits.	Great irritability of system and prostration; no pain; pulse 125; found insensible in morning; bowels distended.	Died at 12, M.	Cœcum contained mass calcareous matter, resembling large-headed nail; point very sharp; nucleus found to be thin; cœcum and A. V. ulcerated through.	Mr. P. Hewett, *Lond. Path. Soc. Reports*, 1848 and '9.
28.	M. advanced in years.	Irregular swelling scrotum; spermatic cord enlarged; skin and cellular tissue thickened.	Inflammation and formation of abscesses in most depending portion; profuse discharge, orange-yellow color; bowels regular.	Died from exhaustion, after lapse of one year.	Condensed omental hernia, enveloping appendix cœci; appendix healthy, except ½ inch of apex destroyed by ulceration.	Mr. Shaw, *Lon. Path. Society Reports*, 1847 & '8, Oct. No., 1851.
29.	M. æt 40, always subject to bilious attacks	Four years ago confined weeks with severe colic; constipation; small, hard tumor in right lumbar region; tender on pressure.	3rd attack, following exposure to cold and irregularity of diet; uneasiness in right side 2 days, pain excessive; tumor in right iliac fossa. 3rd day—slight evacuation.	Died on 3rd day.	Peritonitis; A. V. gangrenous, perforated at both ends; central portion containing mass indurated fæces, size of prune-stone.	Dr. J. M. Warren, *Am. Jour. Med. Sciences*, 1851.
30.	M. æt. 12.	Symptoms of peritonitis.	Pain in umbilical region; constipation; whole abdomen tender; knees drawn up; tympanitis.	Died after week's illness.	General peritonitis; A. V. gangrenous, containing oblong, oval, indurated fæcal mass, with short hairs running through it; no perforation.	Dr. Storer, *Amer. Jour. Med. Sciences*, January, 1851.
31.	M. æt. 40, good	Fell to the ground while engaged in conversation.	Face pale; pulse thready; motion of body painful; abdomen greatly retracted and very painful; pressure on abdomen intensely painful.	Died in 3½ hours from attack.	A. V. much lengthened, thickened, feeling between the finger like a firm cord; containing large lumbricus.	Dr. Blackadder, *Ed. Med. Jour.* vol. XXII., p. 19.
32.	F. æt. 30, married, delicate	Received injury of spine twelve years since.	----------	----------	----------	----------
33.	M. æt. 4	----------	Taken with pain in right iliac fossa, after eating apples and gingerbread; had symptoms of peritonitis.	Died.	Peritonitis; A. V. gangrenous, impacted with fæcal matter.	Dr. Stewart, *N. Y. Jour. Med.* 1846.
34.	M. æt. 27	Siezed with severe rigors after exposure to cold; pain in abdomen.	3rd day:—pain intense: restlessness; thighs drawn up, 4th day:—great prostration; pain in right iliac region, darting to back.	Died on night of 7th day from attack.	General peritonitis; A. V. ¼ inch of distal extremity, gangrenous and disintegrated.	Mr. Nathaniel Ward, *Lon. Lancet*. April 28th, 1855.

35.	M. æt. 21, laborer, good.....	Colicky pains about umbilicus one day.	2nd day:—sudden, agonizing pain below umbilicus, extending to pubis; thighs flexed upon pelvis, and body drawn forcibly forward; extreme tenderness about umbilicus. 3rd day:—pulse frequent, quick; eructations; respiration labored.	Died on morning of fourth day.	General peritonitis; abscess right iliac fossa, involving A. V., had burst into peritoneal cavity; walls of A. ruptured, containing yellowish, cheesy-looking substance.	Dr. F. M. Robertson, *Charleston Med. Jour.*, Nov. 1855.
36.	M. æt. 35, laborer...	Had shooting pain, in abdomen, called peritonitis: recovered.	Again had pain in abdomen; tenderness; vomiting; constipation; tympanitis; peritonitis, without apparent cause.	Died.	Peritonitis; A. V. perforated by two small ulcers.	*Dub. Med. Press*, Aug. 27, 1855.
37.	M. æt. 8 months....	Pain in bowels; languid; vomiting.	Great pain in abdomen; extremities cold; pulseless; respiration hurried; vomiting; restlessness.	Died suddenly.	Peritonitis; A. V. perforated, containing three portions of hard, dry fæces.	*Dub. Med. Press.* Nov. 1854.
38.	M. soldier, good....	Occasional attacks of pain in umbilical region.	Symptoms of violent peritonitis.	Died 24 hours after enter'g hospital.	Peritonitis; A. V. perforating ulcer in middle portion.	*Gazette Med. de Paris.*
39.	æt. 11, good.....	Fall upon stomach.	General peritonitis; great oppression; diarrhœa.	Died 16th day of the disease.	Peritonitis; perforating ulcer of A. V. containing earthy concretion size half coffee grain.	*Idem.*
40.	M. æt. 20, good.....	Complained 3 days of sympt. of abdominal typhus.	3rd day:—pain in cœcal region, vomiting, etc. 5th day:—abdomen tender and tense; bowels open. 7th day:—abdomen less tender; vomiting.	Died after an illness of 7 days.	General peritonitis; A. V. perforated on both sides, containing concretion ½ inch long and 2 lines thick.	*Gaz. Medicale de Paris*, 1843.
41.	M. good.....	Symptoms of gravel.	2nd day:—chill followed by pain. 3rd day:—nausea; vomiting; abdomen tender. 4th day:—collapse.	Died on evening of fourth day from attack.	Peritonitis; A. V. firmly glued down to caput coli; containing a bean; had perforating ulcer.	Dr. Rochester. *Buff. Med. Jour.* Dec. 1855.
42.	M. æt. 8.....	Complained of general indisposition.	4th day:—vomiting; pain in right thigh and groin; abdomen tender on pressure. 6th day:—worse; countenance anxious. 7th day:—prostration.	Died 8 days from attack.	General peritonitis; A. V. enlarged, having two perforating ulcers size of pea; two brown, nodulated calculi in cavity of abdomen, one remaining in appendix	Mr. F. J. Butler, *Prov. Med. Jour.* March, 1843.
43.	F. advanced in y'rs.	Perineal abscess.	Symptoms of ulcerated intestines.	Died.	Lungs studded with tubercles; blind extremity appendix sloughed away.	*Lon. Med. Times*, 1844.
44.	Elderly, Male	Pain in abdomen; nausea constipation, vomiting.	Pain in right ileo-lumbar region; vomiting; bowels moved; tumor in right ileo-lumbar region.	Died about tenth day.	General peritonitis; A. V. given off from cœcum at its inferior part, directed outward around the cœcum, and opening into abscess; no concretion.	Dr. John Burne, *Med Chir. Trans.*, Vol. XXV.
45.	M. æt. 14,.....	Pain in stomach and bowels, several days.	Pain in left iliac fossa; bowels opened; vomiting; extreme tenderness.	Died on 7th day.	Peritonitis; A. V. under cœcum outer side, directed upward perforated, containing intestinal concretion.	Dr. John Burne, *Med. Chir. Trans.*, Vol. XXII.
46.	Male delicate.....	Pain in bowels two days; slight vomiting.	3rd day:—pain in epigastric and right hypochondriac region; tender on pressure.	Died on 10th day.	A. V. containing concretion size of bean; perforated by ulceration; concretion. fæces.	Dr. McCready, *N. Y. Med. Times*, 1856.
47.	M. æt. 3½	Suffered with cough, catarrh, etc.	Fever; pain in belly, passed ascaris lumbricoides after taking medicine; abdomen enlarged and painful.	Died 7th day after entering hospital.	Peritonitis; A. V. perforated by ulcer adherent to peritonium; abdominal cavity contained 47 lumbricoid worms.	Pr. G. Von-Duben, *Dublin Hosp. Gaz.*, 1856.

ART. V.—*The Remote Effects of Anæsthesia on the System.* By FREDERICK D. LENTE, M.D., Surgeon to the West Point Foundry, New York.

IN the September number of this journal is an article on the "Permanent Effects of Anæsthetics," by Dr. Clark, of Newark, in which he mentions three cases occurring in his own practice, where he considers that the anæsthetic, without producing any untoward effects at the time of administration, sets up a train of symptoms subsequently, such as are usually denominated nervous, which were not controlled, in two instances, under the lapse of a year or more. Besides these cases, the writer mentions several others, without going into details, which have occurred in the practice of other physicians in his vicinity, in which very serious effects followed the use of anæsthetics, and were thought to have been produced by their agency, one by the late Dr. Bliss, of New York, of idiotcy and amaurosis following the use of anæsthesia during labor. Whether the unfortunate *sequelæ* of anæsthesia, in all these cases, bear the relation of *post hoc propter hoc* must be exceedingly difficult to determine, even by those who watched the cases; but that this relation existed in some of them at least, is very probable by all the rules of medical evidence.

Although it has been very common, ever since the general introduction of anæsthesia into medical and surgical practice, to meet with individuals who supposed themselves suffering from the remote effects of anæsthetics, and who would assert most positively their determination never again to submit to inhalation for any purpose, we have had, as far as our information extends, no direct medical evidence bearing on the subject previous to the publication of Dr. Clark's article.

The great advantages of anæsthesia in medicine and surgery have now been established on too firm a basis to be easily shaken. For a time, like all great discoveries and inocutions, it had its opponents to contend against, but they were soon borne down by the overwhelming evidence of eminent men throughout the world in its favor. Therefore, we may, at the present time, with less hesitation, inquire whether there may not be other dangers attending its use than that of immediate death, and suggest the propriety of watching patients who have been subjected to its action, for some time after, and noting any apparent ill effect. It is time that so important a subject should be investigated, and

that the great experience of the profession should be known. If instances of the remote ill effects of anæsthetics occur so frequently, as we would infer from Dr. Clark's experience and that of his friends, their use certainly ought to be more circumscribed than it is. It is very probable that those who advocate the almost indiscriminate use of anæsthesia, and there are not a few in the profession who appear to do so, and who practically ignore all danger, will sneer at the record of cases tending to produce any distrust of its safety, and to restrict its application. It will be very easy for them to force the conclusion on their own mind that the alleged bad consequences were due to other agencies than anæsthesia. On the other hand, there will be some danger on the part of those who have never been strong advocates of its use of ascribing to its influence effects which might be attributable to other causes. Still, we think it important that cases in which anæsthetics appear to have been productive of serious ill consequences should be brought to the notice of the profession, that some idea may be formed of the relative frequency of these accidents. With this view we beg to present, in connection with Dr. Clark's record, the three following cases which have occurred within the last five years in our own practice:—

Case 1.—In the summer of 1853, assisted by Dr. Leroy, formerly resident surgeon of the New York Hospital, I operated on a boy in apparent good health, eight years old, for contraction of the index and middle fingers of the right hand, the result of the cicatrization of a bone some years previously. As the case required a careful and somewhat protracted dissection of flaps into the palm of the hand, the patient was subjected to the influence of sulphuric ether, administered by Dr. Leroy, on a sponge in the usual way. Nothing remarkable occurred either during the administration of the anæsthetic or during the operation, and but a moderate quantity of blood was lost. The patient soon recovered consciousness, but in a short time he became very feeble, and soon commenced vomiting, although no food had been allowed for seven hours previous to the operation. The pulse commenced sinking rapidly, consciousness being unimpaired. Frictions were at once resorted to, and stimulants attempted, but were immediately rejected by the stomach. The prostration soon became extreme, and dissolution appeared imminent both to Dr. Leroy and myself. Brandy was freely administered by enema, and retained, and, in the

course of an hour or two, reaction slowly commenced, but it was not until several hours had elapsed that it was considered safe to dress the wounds, so slowly did the patient recover from the prostration.

Case 2.—This patient, a young man in ordinary health, not robust, æt. about 25, of nervous temperament, wished to have a large number of decayed teeth and fangs of teeth removed. At the request of the dentist, who was to operate, I administered sulphuric ether, patient sitting upright in the operating chair, a necessary position during such an operation. The patient had previously been considerably frightened both at the idea of the operation, and of the anæsthetic, although unwilling to undergo the suffering without it; he had accordingly primed himself pretty thoroughly with brandy, but was in nowise intoxicated. Nothing unusual occurred during the administration of the ether, and anæsthesia was induced without difficulty. Six stumps were rapidly and skillfully extracted, say within three minutes, perhaps within two. The patient then showed some signs of returning consciousness, and more ether was administered; anæsthesia was soon re-established, and six more teeth were, with equal rapidity, extracted. The anæsthesia was very complete, but there was no unusual difficulty in recovering the patient, and he was soon able to walk home. A week or two after this, he applied to me, complaining of debility, pain about the head, and dizziness, a disposition to faint and fall down, and various nervous symptoms, which, he said, had troubled him ever since the operation. He was very low spirited and fearful of some serious disease. He, of course, attributed all this to the ether. I endeavored to divert his mind from this idea, and prescribed change of air and tonics. He went away, but returned within a few weeks not much better. Subsequently he improved, and after a couple of months longer was much better, though still rather nervous and desponding. He afterwards went to the city to reside, and since that time I have not seen him.

Case 3.—W. M., a young gentleman, about 30 years old, in robust health, of temperate habits, was attacked with ulceration of the soft parts of the mouth from pressure of a crowded wisdom tooth, the pain was very severe, causing loss of rest and food. I advised the extraction of the tooth, but the dentist to whom he applied merely cut away the overhanging edges of the ulcer; the inflammation increased

and extended to such a degree as to produce almost complete closure of the jaws with inability to open them. It was absolutely necessary now that the tooth should be extracted as the only means of arresting the inflammation, and it was therefore proposed to etherize the patient in order to allow the jaws to be forced open sufficiently to admit the introduction of a forceps. Sulphuric ether was accordingly administered; the patient came rapidly under its influence, scarcely requiring an ounce and a half, though not entirely unconscious; the jaw was forced open with but little difficulty, and the tooth rapidly extracted by the dentist in attendance. The patient soon recovered, but seemed a little nervous and considerably excited, but expressed himself as entirely relieved from the severe pain he had been suffering. He was advised to go home and lie down for a few hours. He walked home, about a quarter of a mile or more, and followed my advice; but in the afternoon complained that the ether was still in his lungs, and sought to get rid of it by riding and walking. In the evening he was at the house of a friend in gay society, and seemed to enjoy himself, still, however, occasionally complaining of some difficulty about his chest, when, all at once, he fell from his chair, exhibited great restlessness, tossing about of the arms and legs, with great difficulty of breathing, but no loss of consciousness, declaring all the time that he could not get his breath for the ether, and that he should die; his hands and feet were said to be cold. Before I reached him, various restoratives had been applied, and he had been almost drowned by the assiduous application of hot water. It was evident at once that it was a case of violent hysterics, unusually well marked in a male. Patient at times would laugh and joke, then express fears of impending suffocation, with jactation, declaring that as vapor of ether was heavier than air, he ought to be held up and allow it to run out of his lungs. As he was rather weighty to allow of convenient inversion, his request was not granted. Large doses of morphine were administered but had no effect; it was only after several hours that he could be quieted. The next day he was able to be up, but complained of weakness and a disposition to faint on the slightest attempt to walk, also of some difficulty of breathing. This continued for some days, but finally disappeared, and, within ten days, he was apparently in his usual condition. Patient has never previously exhibited any tendency to hysteria.

ART. VI.—*Case of Poisoning by Stramonium.* By GEO. T. ELLIOT, JR., M.D. Physician to the "Nursery," and to Bellevue Hospital.

AT five P.M., October 11, I received a note from the matron, requesting me to call immediately at the Nursery, as one of the children presented alarming symptoms, and had probably eaten some stramonium seeds.

I found Samuel Richardson, a robust little fellow, aged four years and five months, in the following condition:—Skin very red, very hot, and moist; expression of countenance wild and staring; pupil nearly fully dilated, and utterly insensible to light—a lighted candle could be so held as almost to singe the eye-lids, without inducing contraction of the iris, and without attracting the patient's notice; child so wild and restless as to be controlled with difficulty, and in raging delirium, biting with fury at those who restrained him. Unable to stand, and yet plunging in a restless manner in whatsoever position he could be placed—all the movements being ill-coordinated, and resembling those of chorea. The pulse more rapid than I could count. His respiration greatly hurried, and at times gasping and choky; constantly talking, and yet unable to articulate a syllable, while from the expression of his face and movements, he seemed at times to be chasing, or fleeing from, imaginary objects.

On inquiry, I learned that his very flushed face had first attracted the matron's attention, and on noticing that there was no perspiration, she watched him, and soon found him staggering and behaving as though intoxicated, when she learned from his playmates that Sammie had been playing with the stramonium plant about an hour and a half before.

Just before I arrived he had thrown up some indigested food, and some thirty seeds, which were found to be those of stramonium. He had passed water, but had had no movement of the bowels.

Ordered a tea-spoonful of mustard dissolved in water, which caused him to gasp in a somewhat alarming way, but was promptly ejected, together with more seeds. In a short time a half tea-spoonful of alum dissolved in warm water was given, and after that had operated, warm water was administered. He vomited three times—a very few seeds appearing in two, and none in the third.

6 P.M.—Called the matron "a nasty thing" distinctly, otherwise no change. He then slept till eight o'clock, with

much jactation and restlessness, and had one large movement of the bowels unconsciously, contents not examined; when he awoke his skin was comparatively cool, and the pulse 150; pupil the same, no apparent thirst; restlessness, intolerance of control, and chorea-like movements continue.

9 P.M.—Has had two more passages, one quite copious, a few seeds in the second. Head to be rubbed with iced water every few minutes.

11 P.M.—Has improved. Pupil answers slightly to the candle held as before, and child conscious of its presence, and afraid of its proximity; has had two more passages with a few more seeds; can articulate pretty distinctly; can stand, and has taken three steps; chorea-like movements persistent, and patient, when not aroused, lies in a state of mild delirium; sings, talks, fancies that there are dogs in the room, which he describes, and attempts to chase, springing suddenly to his feet, and as suddenly toppling over; sometimes talks of events of the day as though they were now taking place. Cold to the head to be discontinued.

3 A.M.—Has had two passages with more seeds; passed water twice, once very freely, thirsty. More conscious, gained in distinctness of articulation, coherence of speech, and coördination of movements, though still restless.

Oct. 12, 10 A.M.—Has slept until 5 P.M., with about the same amount of jactation, and, on awakening, had a passage containing some twenty seeds; at 8 A.M. another containing some few more, and then slept peacefully. Is now perfectly conscious; voice and articulation natural; face still markedly red; pupil somewhat dilated; pulse 120. Ordered arrow-root, hominy, or rice, with an occasional tea-spoonful of a mixture made with olive oil and thin mucilage sweetened. The pupil did not resume its natural state until the 14th, but the child is perfectly well in every respect.

The Nursery has occupied its present position for the last eighteen months, but the likelihood of such an accident was never contemplated. The writer believes that poisoning from this source cannot but be more frequent than is generally appreciated, and for that reason has presented every symptom and incident in this case as minutely and as accurately as possible.

43 West 32nd Street.

ART. VII.—*On Chorea and its Affinity to Rheumatism.* By A. B. SNELL, M.D., of Amsterdam, N. Y.

THE frequent association of chorea with rheumatism has been noticed by various recent authors, yet, curious as it may appear, none have given us a clear insight into the pathological relations of the two diseases. They have sought for a satisfactory explanation of this connection in the solids of the body. By some it was attributed to metastatic inflammation of the spinal cord; others believed the affection of the pericardium to be the connecting link; while others again inclined to the opinion that the ganglionic system is the medium of communication.

The object of this paper is to offer to the profession the theory hinted at by Simon, that chorea, like rheumatism, is essentially a humoral disorder, depending for its cause upon some qualitative changes in the blood; that the materies morbi is generated in the system as a product of malassimilation or vicious metamorphic action.

That rheumatism is a blood-disease there cannot now be the possibility of doubt or denial, and, although the cause which gives rise to it has not received actual demonstration, it is none the less established that it depends upon a poison in the blood. Indeed, the researches of modern science have almost positively ascertained it to be of a specific character, viz., lactic acid, a natural excretion of the skin.

The precise nature of the poison in chorea it would be premature, in the present state of our knowledge, to assert. We may, however, hazard the conjecture, that, if not identical with that of rheumatism, it is something readily convertible into it.

Simon, the only person who has given us anything like a rational and scientific view of the subject, in his late work on pathology, says: "As regards the affinity between chorea and rheumatism it does not, by any means, appear that the humoral disorder is identical in the two diseases, since they are never coincident in their occurrence; but it seems rather that the material which collects in the blood, prior to an attack of rheumatic fever, and which, by its explosive decomposition, subsequently evolves the numerous evacuations of the disease, may, while accumulating within the circulating current in its original form, become capable of producing that irritation of the nervous centres characteristic of chorea."

To illustrate how truly this theory is confirmed by facts,

I subjoin brief details of four cases occurring in the practice of my father, which were taken without reference to any hypothesis.

Case 1.—A girl, 10 years of age, whose father died of rheumatism, became slowly affected with chorea, for which the usual course of remedies, including iron, was administered, and she got comparatively well. The duration of recovery was, however, short, only to give way to a disease far more serious in its consequences. In about a month, acute rheumatism with its cardiac complications supervened with great intensity, and, in spite of treatment, she died.

Here we have a succession of phenomena which harmonize so completely with our theory of the disease that it is impossible to overlook them. Do they not clearly indicate to us the kindred nature of the two affections? Does it not appear that there is a constitutional diathesis here, which, being corrected for a time, again manifests itself in a new and modified form?

Case 2.—This case is very similar to the first, except the patient is a girl of 16. The muscular agitation here was extreme. She could not control even her most voluntary movements. If she started for one part of the room, she was quite likely to find herself in another. Finally, it subsided, and well developed rheumatism set in and proceeded rapidly to her death.

The general features of this case are so much like those of the first, that there is nothing to be particularly commented upon.

Case 3.—This is the case of a boy, 8 years of age, whose father is subject to rheumatism, and whose little brother, of five years, has been afflicted with a urinary deposit, probably of the lithates. He has been the subject of chorea and rheumatism at various times for three years, vacillating between health, chorea, and rheumatism. Twice has he been under medicinal treatment for chorea, and been cured. After an interval of a month or so, rheumatism of a sub-acute character would show itself, keeping him from school and confining him to the house, and this, again, followed by the enjoyment of health or at least by freedom from either disease.

Case 4.—A young lady, 17 years of age, was attacked with chorea at the age of seven or eight, which continued three years—chorea in summer and rheumatism in winter. From ten to fourteen, she had slight attacks of chorea occa-

sionally, but, on the whole, enjoyed tolerable health until the fall of 1855, when she was attacked with acute rheumatism, complicated with endocarditis. She was confined to her bed all winter, but is now quite restored.

The two last cases exemplify the affinity of the two diseases in so clear and unmistakeable a light, that the most skeptical would find it difficult to gainsay or raise an objection. We see rheumatism obeying the law of hereditary transmission; we see the offspring of rheumatic parents prone to chorea; we see the two blending together—chorea giving way to rheumatism, and rheumatism relapsing into chorea.

Upon the whole, we cannot but believe that the simple and true views of their relation is to be found in the morbid condition of the blood which is admitted to exist in the rheumatic constitution. That the inflammatory affections of the fibrous tissues, as well as the spasmodic twitchings of the muscles and tendons, originate in the same specific disorder of the circulating fluids.

In considering how much has been already achieved in this department of our science, we may confidently hope that the labors of the microscope and the advancing light of organic chemistry will, ere long, reveal to us the precise nature of the disorder. Until then it will be difficult to deduce philosophical principles of treatment. To check the further conversion of material in the blood—to destroy the poison or turn it into a harmless condition—or to anticipate the eliminative efforts of nature—these are the indications which pathology would suggest, and these have already, in great part, attained the sanction of experience.

It is only within the last two years that my attention has been directed to the subject. The experience of a private physician is comparatively limited. It will require additional evidence and a more extensive field of observation to render the theory a fixed fact.

ART. VIII.—*Case of Fracture of both Maxillæ, with Other Severe Injuries, Terminating Favorably.* By ANDREW BAKER, M.D. Norwich, Chenango Co., N. Y.

RICHARD McNAMAR, æt. 28, of robust constitution, and in the enjoyment of good health, while engaged in grinding hammers in D. Maydole's hammer and edge-tool factory in

this place, received the following severe injuries by the bursting of the grindstone on the 15th of February, 1856:—

I will premise briefly, before describing the injury sustained, such facts as I learned on visiting the place, relative to the size, velocity, etc., of the stone. The stone was estimated at the time of the rupture, to weigh 2,500 pounds, was six feet in diameter, and making, as nearly as could be computed, 500 revolutions in the minute. It broke into four principal pieces, one of which ascended through the chamber floor, came in contact with an anvil, which it removed some fifteen feet. Another went through the flume partition (fortunately above the water) and coming in contact with a heavy timber, bounded back. The other two pieces took, the one a downward, and the other a more horizontal direction, and made a perfect wreck of the shop and floor wherever they hit. Richard at the time was seated on a lever or beam, made for the purpose, by which he pressed the hammer on the stone, nearly on a level with the top of the stone. It is impossible to say, with certainty, what it was that came in contact with him that produced the injuries, but it is probable that the lever on which he sat was the main agent.

I was called to see him directly after the injury. He had been removed to the house. His extremities were cold, his circulation feeble, and his mind nearly extinct. On examination, I found his face extensively mutilated, with fracture of the right upper jaw, supposed to be at the floor of the antrum, letting the entire side of the jaw drop at least half an inch lower than the other side. The lower jaw was fractured in three places, viz., first, to the right of the symphysis, nearly transverse; second, on a line with the left cuspid and bi-cuspid teeth; this was extensively comminuted, from which three quite large pieces of bone were subsequently removed; and the third fracture was near the left angle of the jaw. The blow, of which these fractures was the result, was continuous from the left supra-orbitary region, in a line down the face, and ending at the bottom of the chin, where the lower jaw was comminuted. There was a wound in the forehead three inches long, down to the bone, but not fracturing it. It next cut through the entire upper lip as far up as on a level with the bottom of the nose, and lacerated extensively the gums of the upper jaw. It then took the under lip and divided it entire to the base of the chin, so that the blood and saliva flowed out at the bottom of the wound. In addition to these he received several severe con-

tusions, and also a blow on the chest, which interrupted his breathing very considerably.

After using means to restore circulation and warmth, I proceeded to dress the wounds. The flesh wounds were severally brought together by the interrupted suture, and further secured by adhesive straps and bandages. The lower jaw was brought as accurately in place as possible, and secured by a bandage made of leather, passing from the bottom of the chin over the top of the head. This was secured in its place by a circular bandage passing round the head and crossing the first at right angles, to which it was made fast in the crossings. Attached to chin portion of the bandage was a piece of strong cloth, to rise over the front of the chin and make as much pressure as was necessary to keep the bones in line.

Owing to the extensive injury and swelling of the parts, the jaws could not be closed on each other, into three-fourths of an inch or more. No fixtures were applied to the upper jaw at the first dressings.

The extreme severity and complication of his injuries, led me to suppose that it was extremely doubtful if he would survive the night. The next morning, however, I found him in a more promising condition, his mind considerably restored, could take food in a fluid form.

My next inquiry was, how to secure the upper jaw in its place. It was constantly depressed half an inch or more. It was easily pushed to its place by the point of the finger, but would immediately drop when the pressure was withdrawn. The cork dressing was tried, but I found it entirely inoperative on account of the condition of the lower jaw. The *gutta percha* finally presented itself, and I determined to give it a trial. I cut off a piece of a convenient size to form a plate, to come in front of the teeth and gums, drop under and behind the teeth, and finally into the roof of the mouth. After having brought it to a proper size, form, and thickness, bringing it to an entire edge around the whole circumference, while it was yet warm from the hot water, I proceeded to mould it in my own mouth to the proper shape. I then tried it in his mouth, and found it to fit very well.

To this plate I attached two tapes, corresponding to the two angles of the mouth. I then inserted the plate into his mouth and made upward pressure till I brought the jaw in a line with the sound side, drew up the tape from each angle of the mouth and secured the other extremity on the top of

the head to the other dressings. I found it secured it perfectly in place, and did not materially interfere with his swallowing. Its presence in the mouth, to be sure, at first, was somewhat annoying, but he soon became accustomed to it and bore it very well. This plate was removed and cleansed every day, taking the precaution to support the jaw with the finger during its absence. He continued to wear it for five weeks, when the fracture was found to be well consolidated.

The flesh wounds nearly united by the first intention, with the exception of the lower portion of the one on the under lip and chin. This continued open and suppurated extensively for some six weeks, the saliva continuing to flow through during the time.

The lower jaw at the point of the two outer fractures seemed to be well united in a couple of weeks, so at least that no crepitus or movement could be detected. But the middle fracture, where it was comminuted, took some time longer to unite. The suppuration from the wound in the chin seemed to be connected with, and kept up by, the bony lesion. At the end of four weeks a loose piece of bone was detected in the wound, which was withdrawn with the forceps. In a short time two other pieces followed. The bi-cuspid tooth, which was entirely loose and crowded out of line, was also removed. After this the wound soon healed and the jaw became perfectly consolidated and in very perfect shape. He could now close his jaws and begin to take solid food of easy mastication.

The wounds in the two lips were very perfectly, and, I may say, beautifully, united, hardly leaving a scar that was perceptible. The one on the forehead showed a little more breadth, but not unsightly. I found, on the healing of the upper lip, it had become extensively attached to the gums and upper cavity of the mouth, so that it was impossible for him to cover his upper teeth or bring the lips together to close the mouth. I was obliged to dissect up the adhesion with the scalpel and keep the parts separated with lint, until it was healed, which entirely relieved the difficulty.

It is, perhaps, unnecessary to speak in this connection of his other wounds received at the same time, any further than they may have had a bearing on the principal features of the case. The blow and consequent injury of the chest gave him a good deal of trouble during his whole confinement, as manifested by more or less painful respiration, and

great difficulty in attempting to rise or change his position. It was treated by fomentations and finally by blisters.

A wound on the right elbow assumed, at one time, a very formidable appearance. The whole arm and forearm, including the elbow, became intensely inflamed and swollen. It was treated with fomentations and poultices, and finally gave way to a free suppuration at and near the elbow. The suppuration was apparently confined to the cellular tissue.

I am happy to say that his recovery seems to be complete. He has as perfect and free use of both jaws as he had before the accident. He says he can masticate tough beef steak, or any other food without giving the least pain, and there is no disfigurement of the face that would be noticed by a casual observer.

ART. IX.—*Case of Concussion of Nerves Successfully Treated.* By DAVID P. SMITH, A.M., M.D., Springfield, Mass.

ON reading Prof. Willard Parker's communication on concussion of the nerves, in the *New York Journal of Medicine* for September, I was so strongly reminded of a case which occurred in my own practice some years since, that I thought an account of it might prove valuable both by itself, and also taken in connection with Prof. Parker's cases.

Case.—Miss H. M., of Long Meadow, Mass., some months before I saw her, received severe injuries from a fall on the pavement, in the effort to escape from a runaway horse. From the effects of the fall and fright she was a good deal prostrated, but recovered sufficiently to ride home. The force of the fall was received upon the upper and back part of the hip. When I saw her, I found no organic alteration of structure, no swelling, no tumor of any sort, and was not able to discover anything abnormal in any of the bodily functions. She could walk for a short distance quite well; but was liable at any time to suffer immediate loss of power in the limb, followed by a *dull pain*. There was no tenderness of the spine on pressure. Blisters had been applied, but were followed by a great *sense of weariness*. Not only herself but her sisters were of a highly nervous temperament. I considered her disease to be wholly of the nervous system, taking its rise from the fall and fright, and kept in being by nervous weakness, which prevented a sufficient nervous influence being sent to the limb, to enable it to recover from the blow and perform its ordinary functions. The temperature and

appearance of the limb I am ignorant of,—as from motives of delicacy I examined without uncovering it. The treatment I advised was the administration of small doses of iron by hydrogen, quinine, and nux vomicus. She was also directed to ride in all weathers, and use the limb only as much as was agreeable to her feelings. Under this treatment she rapidly improved, and is now, I believe, perfectly restored to health. I saw her only about a month ago, she having called to see me about another person, and she informed me that the limb did not now trouble her at all. I am thus particular in stating the result, because I am well aware of the tendency to relapse. However, as over a year has elapsed since I was first consulted, I think the cure in her case will be permanent.

ART. X.—*On Inverted Toe Nail.* By P. STEWART, M.D., of Peekskill, N. Y.

THE first article in the July number of the *New York Journal of Medicine*, from Dr. Batchelder, on "Inverted or Imbedded Nail," was read by your correspondent, with great pleasure, as articles from his pen always are. They are so replete with common sense and sound judgment, that one scarcely ever feels like questioning the correctness of his conclusions or his practice.

The complaint of which he treats, he very justly remarks, "is a troublesome one," and it is one so common that every physician in full practice is frequently called to treat it, hence it becomes a matter of more importance to nine practitioners out of ten, to know how to treat it correctly, than to know the best method of operating for stone in the bladder, or of tying the carotid artery, for not so large a proportion as one-tenth of the medical men of the country, will probably ever perform either of those operations.

Dr. B. prefers treating this complaint by insinuating a compress under the depressed nail, gradually enlarging the compress from day to day, and extending it to the root of the nail.

His successful experience of fifty years to which he refers is ample proof of its efficacy; but does not prove that other methods may not be equally effective. But if the operation may be more quickly performed, saving to the patient two or three weeks of time in the process of cure, and in the

aggregate a considerable amount of pain, we are, by every reasonable consideration, bound to adopt it.

My own experience being the guide, we have such a method. But it is not a new one. It is the same old method which Dr. B. characterizes as "harsh and cruel," and which he thinks "seldom effects a radical cure," I refer to the common operation of splitting up and extirpating the inverted portion of the nail. It has fallen to the lot of the writer to perform this operation a considerable number of times, and of the injunction of wearing a shoe, "whose inner sole is as wide as the foot," after the operation, has been strictly complied with, the cure, I think, in every case, has been radical and complete; and that injunction Dr. B. puts as an essential condition of his preferred method.

Now, Dr. Batchelder is a man of universally acknowledged skill in his profession, and of profound judgment, and sterling integrity, and "who knows whereof he affirms?" It would therefore be idle to attempt to detract from the merits of his favorite mode of performing this *minor* and yet important operation in surgery. That is no part of the object of the present article, but simply to give reasons for adopting a different course to reach the same result, from the one he prefers. Those reasons are threefold, viz.:—1. The operation is much shorter, occupying about ten seconds. 2. There is, in the aggregate a much less amount of pain inflicted. 3. There is a saving of several days or weeks of time in the process of cure, and it is believed to be equally effectual. If the nail be properly softened by the application of a poultice for one or two days, and a sharp scissors with moderately narrow blades, slightly curved vertically, is used to divide the nail, and this be done with a firm, quick motion, and then in an instant the cut edge of the nail is grasped by forceps and turned outwards and downwards, the patient will usually exclaim, in surprise, at the slightness of the "hurt." A dressing of a soft poultice, warm water or simple cerate, usually completes the cure in a very few days. Occasionally the application of caustic may be necessary to destroy fungus, as in Dr. B.'s method. One requisite in this method is that the nail should be completely divided to its matrix, an omission which is a frequent cause of failure. If a portion of the root is left, it grows and extends in the same direction as before, because it is already thus inclined.

In about three days after removal, even in bad cases, the

patient may be allowed to wear a loose shoe or moccasin, and walk about *ad libitum*. On the average, in about ten days, the cure may be considered complete, while in the other case a much longer time is necessary, and the operation of adjusting the compress must be done almost daily during the whole period of cure. If anything can be inferred from the writhings and outcries of the patient, more pain is induced by a single application of the compress often than by the entire removal of the nail. The most sensitive portion is the part with which the compress comes in contact and presses with considerable force, which is not touched at all in removal.

Whichever operation is chosen, if the pressure which first induced the malady is continued, the deformity continues. But if discontinued, alike in both cases I apprehend, will the result be otherwise.

ART. XI.—*Abstract of the Proceedings of the Medical Societies of New York.*

REPORT ON YELLOW FEVER.

REGULAR MEETING, Oct. 1, 1856, DR. WILLARD PARKER, *President.*

Dr. JOHN H. GRISCOM, Chairman of the Section on Public Health and Legal Medicine, read a report on the following subject, which had been referred to this Section by the Academy, viz.: *Yellow Fever in its Relation to the Sanitary Condition of New York City in the Present and Past Years.*

This report, which was elaborately drawn up, began with a reference to the earliest appearance of epidemic diseases in this country, and traced with considerable minuteness their history in subsequent periods.

The earliest notice of their prevalence in North America, is found in a dedicatory epistle of a sermon delivered by Elder Cushman, at Plymouth, in 1620, just after the colony arrived. He states that, "They (the Indians) were very much wasted of late by a great mortality that fell among them *three years since.*" "It raged in winter and affected the Indians only." Noah Webster, in his work on Pestilence, decides that this disease was the modern yellow fever. There is a doubt of the correctness of this conclusion, as the disease raged in winter, and the Report regards it as a malignant typhus, with bilious complications. From 1632 to 1637, pestilential diseases prevailed in America, and again in 1668, when the epidemic was so fatal in New York that a fast was appointed. In 1695, a mortal sickness prevailed among the Indians in the eastern parts of this continent. In 1699, a more general sickness than this malignant fever occurred. In Charleston and Philadelphia, a most deadly bilious plague broke

out; it commenced in Philadelphia about the first of August, and was called the "Barbadoes distemper." "The patients vomited and voided blood."

In 1702, the American plague, as it was called, and which the Report regards as yellow fever, raged severely in New York. It was said to have been imported from St. Thomas, and was so fatal that scarcely a patient survived. Out of a population of 6,000 or 7,000, 500 died up to September, and 70 more during the following week. It was called "the great sickness." In 1719–20, a malignant pleurisy prevailed in some parts of the country; and in 1720, Duck Creek, in the State of Delaware, was almost depopulated by some disorder, whose character is unknown. In 1723, a "burning ague" prevailed in Rhode Island, which was exceedingly fatal. In 1732, a malignant infectious fever raged in New York; and in the same year, the American plague prevailed in Charleston. The same plague appeared also in Philadelphia and Virginia in 1741.

In 1742, a mortal fever broke out in Holliston, Mass., and in 1743, the inhabitants of New York suffered from a "bilious plague." It is interesting to notice the fact that the first official report of the mortality of the city was made this year. It was by the Mayor, and is as follows:

"New York, Oct. 24, 1743. By the Mayor of the city. An account of persons buried in the city of New York.

From July 25 to September 25, 1743:—

Children	51
Grown persons	114
	165

From September 25 to October 22:—

Children	16
Grown persons	36
	52
	165
	217

And I do find, by the best information I have from the doctors, etc., of this city, that the late distemper is now over.

JOHN CRUGER, Mayor."

In 1745, a malignant bilious fever prevailed in New York, of which Noah Webster remarks, "There appears to be no question that it was the same disease now called yellow fever." In the same year an infectious fever prevailed in Boston, and the yellow fever in Charleston, S. C. Stamford, Conn., suffered severely from a malignant dysentery, of which seventy, out of a few hundred inhabitants, died. About the same period, a malignant epidemic disease laid waste the Indian tribes, which, from the descriptions of traders, would appear to have been infectious yellow fever. In 1746, the Mohegan tribes, between New London and Norwich, Conn., were attacked by the same disease.

The following were the symptoms of this fever, as detailed by the physician who attended them:—"The patient first complained of a severe pain in the head and back, which was followed by fever; in three or four days the skin turned as yellow as gold, a vomiting of black matter took place, and generally a bleeding at the nose and mouth, which continued till the patient died." A malignant disease also appeared at Albany this year, called by Colden "nervous fever," and by Douglass "yellow fever." It began in August, and ceased on the occurrence of frost.

In 1747, a bilious plague prevailed in Philadelphia; in the following year it visited Charleston, S. C., and again in 1761. In 1776, the Mohawk Indians suffered from a malignant disease. In 1778, a bilious plague occurred in Philadelphia, and in 1780 a bilious remittent prevailed in the same city, which was called "break-bone fever."

In 1791, yellow fever prevailed in New York, proving fatal to 200 persons; and in the following year it appeared in Charleston, S. C., New York being exempt. In 1793, it raged in Philadelphia, causing a mortality of 4,040. A difference of opinion existed among the physicians of that city, as to the origin of the disease. One party traced it to infected vessels arriving from the West Indies, and the other ascribed it to exhalations from damaged coffee and filthy streets. No cases occurred in New York but what were imported from Philadelphia, during this year. In 1794, twenty or thirty cases occurred in New York, exciting some apprehension in the minds of citizens. The cases were limited to those persons who were employed in cleaning out slips. In Philadelphia, the disease proved fatal to seventy or one hundred persons, and on the 10th of June it appeared at New Haven, Conn.

In 1795, it again appeared in New York, the mortality amounting to 730 deaths, of which 500 were among foreigners, and 452 of these belonged to a single Catholic congregation. The first case that attracted public attention was the Health Officer, Dr. Treat, who died July 29th. Dr. Treat ascribed his disease to exposure on shipboard, and especially to a corpse which he assisted to bury on Governor's Island. The epidemic prevailed principally along the East River, and in low swampy parts of the town. It occurred also in Norfolk, Va., in this and the preceding year.

In 1796, but few deaths from yellow fever occurred in New York. They were principally in the neighborhood of White Hall, where a new dock was being built. This dock was built sixty feet into the river, with a front of 458 feet, and having an average depth of nine feet. It was estimated to require 24,000 cart loads to fill this dock, 8,000 of which, being above the ordinary hight of the tides, was exposed to the action of the summer sun. The remainder was covered with water at variable depths. At the foot of Broad Street, a common sewer discharged its contents, which were exposed to the sun at low water. "It will surprise no one to learn that seventy persons lost their lives by inhaling the poison evolved from such a seething mass of corruption." The epidemic prevailed in Wilmington, N. C., causing 150 deaths in 130 families, and also in Charleston, S. C., Newburyport, Massachusetts, Boston, and Philadelphia.

In 1797, yellow fever appeared in Charleston, S. C., Norfolk and Baltimore. In Philadelphia 1,000 persons died of it, and Providence, R. I., forty-five. There were but twenty-three deaths in New York.

In 1798, the plague prevailed so generally and severely as to be called the "Great Epidemic." Most of the northern sea-port, and many of the inland, towns suffered more or less severely. Philadelphia lost 3,440 inhabitants, New York 2,086, and Boston 200. In New York it prevailed in localities noted for filthiness, and its origin and prevalence were attributed to local causes. "Its worst effects were observable in Cliff Street, and that neighborhood, between John and Beekman. The aggravating cause in that locality, was believed to be the fetid air from large quantities of spoiled beef, stored in the cellars on Pearl Street. On the windward side of this section, these cellars were filled with water by heavy rains, and even by high tides, and were always damp. The effect was augmented by large quantities of pickle, which, in the process of repacking, was discharged into the gutters, and suffered to run into a sewer in Burling Slip, producing a very offensive smell." The disease was very malignant, exhibiting buboes and carbuncles. It is a remarkable circumstance, in the history of this epidemic, that, while the northern cities suffered so severely, such southern towns as Baltimore, Charleston, and Savannah, were exempt from yellow fever.

The report continued to trace in detail the history of yellow fever in this country during the last half century, but as the principal facts have already appeared in this Journal, we shall give only the closing portions of the paper. In regard to contagion, the Committee remarks:

On this question, your Committee are not called upon to *express* an opinion, and though they may entertain a decided view upon the subject, it is their duty to look upon it only in its relations to the public sanitary interests of this great city, and to recommend such a course as will best conduce to their preservation. True history alone can solve this intricate problem. The domestic origin of the poison is asserted by numerous writers, and in many instances of proof quoted by them, reasons of high plausible character, based upon apparently well-authenticated facts, are urged in support of their views. We say *apparently*, because, at this distance of time, and in the impossibility of cross-examination, as to the facts, we can only yield a passive acquiescence to many of their statements. And, in view of the importance of the subject, prudence would also justify an acquiescence in the theory of its *possible* domestic productions,—*provided* always that we, at the same time, do not ignore the existence of the incontrovertible proofs of its importation from abroad, and the necessity of a rigorously enforced quarantine at whatever cost.

Such shocking collections of all that was vile and offensive, as we know to have existed in the numerous slips and docks, in the unpaved streets and alleys, and the crowded cellars of this city, in the latter part of the last, and the early part of the present century, were cause enough for miasmata of some kind, capable of sweeping off scores and hundreds of the people living adjacent; and whether the atmosphere of these localities was a direct provocative of yellow fever, or served

only as a richly manured soil, in which the germs of that disease, introduced from abroad, would grow with redoubled vigor, it matters not to us practically. It is enough to know that such conditions of things are inimical to human life, and should never be permitted. Sad experience has too often shown that in them there exist, waiting only the proper time and temperature to leap with active life, the seeds of evils as numerous and pungent as Pandora ever dreamed of.

It is, nevertheless, at least a coincidence, that in such a depraved condition of its eastern margin, New York sustained in sixteen years; (from 1791 to 1807) thirteen attacks of yellow fever, causing the death of at least five thousand persons, and each time compelling the flight from their homes and occupation, of many thousands of the population. And it is another interesting fact that, since the year 1807, New York has been visited by it but twice, viz.: 1819 and 1822, and the latter visitation was on the opposite side of the city, against which no complaints of nuisances could be made; and the commencement of this period of exemption was moreover coeval with the enforcement of a law, for the filling up of these slips, and the general improvement of those ancient haunts, in which the opponents of its importation so clearly saw the domestic source of the disease.

Whatever consolation, therefore, the advocates of domestic origin may derive from these facts, they are fairly entitled to, after we have stated some other remarkable coincidences which bear strongly upon the opposite doctrine.

The circumstance which was quoted from N. Webster, that, during the revolutionary war, our country was not visited by yellow fever, *he* would doubtless attribute to an interposition of Providence, though he does not hold so in express language. He speaks of it simply as a "striking fact," in the midst of his labored effort to prove the source of nearly all epidemics to lie in local domestic circumstances, in combination with meteoric influences, and the appearance of comets. A more rational solution of the circumstance may, we think, be found in the fact that, during the war, all foreign commerce was suspended.

In relation to the localities at which the fever invariably appeared, before 1822, attention has already been drawn to the fact, that they were upon the borders of the city, and of course in the immediate vicinity of the shipping, where importations of every kind were first received,—while at the same time there existed in the centre of the city, other localities, the receptacles of all manner of filth and nastiness, in whose neighborhoods the fever not only did not originate, but which were in fact exempt from its incursions when it prevailed elsewhere. Of these places, the most noted was "the Collect," in Centre and Canal Streets.

The next coincidence to be remarked, in the relations of this city to the yellow fever, is this, that it was not until the commencement of the present century that our quarantine laws took a definite shape, and sanitary enactments were enforced with the rigor which now characterizes them. It was only in 1805, that infected vessels were prohibited from coming within 300 yards of the Island of New York, after being discharged of their cargoes, while the law of 1806 even restricts

vessels from the West Indies and the Mississippi arriving between June and October, to only four days detention at quarantine, and prohibits intercourse between their crews and the city of New York, except under regulations of the Health Officer. And since a year after that time, though yellow fever has frequently hovered along our border, it has, on but two occasions, up to the present year, planted its foot beyond.

These, then, are the premises from which, as conservators of the public health, we are to draw our conclusions of duty, with respect to yellow fever:

1. To maintain a thorough condition of cleanliness and purity in all the borders, and throughout all the interior, of the city.

2. By a rigid continuance of the quarantine, to watch its approaches from abroad, and arrest its progress, ere it reaches even our threshold.

DISCUSSION.

Upon the acceptance of the Report, which it was understood, was drawn up by Dr. Griscom, as Chairman of the Committee, Dr. Francis remarked that he was certain the members of the Academy must be gratified with the proofs it gave of much research, the many facts it contained, and the principles which it avowed. There is, nevertheless, continued Dr. Francis, matters embraced in this document, which I would be loath the Academy should approve. Too much obscurity envelopes the history and character of the epidemics which prevailed at an early date in our country: the records of those early pestilences are often imperfect; the nosology of those disorders which induced such havoc among our Indian tribes and our first settlers, is wholly unsatisfactory, and we are unable to state how far those malignant fevers, recorded by Webster and others, are to be classed with yellow fever, or are to be considered only modified types of bilious, intermittent, and remittent febrile affections. Mr. President, I would reject as materials with which we can come to no safe conclusions of a practical nature, the first part of the Report; we have grounds for reflection, and inference with that part of the Report of the distinguished Chairman, which embraces the several periods which recorded testimony assures us were seasons of yellow fever, when this direful calamity committed its wide-spread ravages amidst the population of our larger sea-port towns and cities, and on this portion of the able report we can rely. The learned Chairman has proved his capacity for investigation, and has with great fidelity afforded us a summary of yellow fever periods, that is when the disease appeared among us, both clear and impartial. His statements of those occurrences, from my own personal knowledge, I know to be correct in most instances. Still, there is a want of testimony in the Report, as to causes of the origin of the yellow fever among us, save in some few instances of its appearance, when the Chairman in my opinion has given us the true history of the source of the pestilence.

Thus, I do not believe, continued Dr. Francis, that the circumstances which the Report sets forth as the causes of yellow fever in 1791, 1795, 1798, 1801, 1803, 1805, etc., are sufficiently proved for medical

reliance, or is such testimony as puts beyond controversy the domestic origin of the yellow fever at those several visitations. Dr. G. the chairman, has indeed told us many of the details on which the advocates of the domestic source of the pestilence rely: they are to be found chiefly in the *Medical Repository*, in the writings of Dr. Mitchill, Dr. Miller, Dr. Seaman, and Dr. Rodgers, gentlemen who were on different occasions contributors to the pages of that distinguished journal. But we have other authorities of equal excellence on which to ground a different opinion from that which the Medical Repository and Noah Webster inculcate, and I may cite the records of the College of Physicians of Philadelphia, the writings of Currie, of Wistar, of Townsend, of Stringham, of Walters, of Bailey, the many papers by the late Dr. Hosack, the *American Medical and Philosophical Register*, and other works to demonstrate the reasons for an entirely different belief. The report of the chairman frankly sets forth that the pestilential fever which prevailed in our city in 1822, and the same fever which at present afflicts the inhabitants of Staten Island, and the parts adjacent, on Long Island, is an imported pestilence, an exotic brought in by the shipping, and in so doing, more particularly with regard to the present yellow fever, he does well: he only utters a truth, which perhaps scarcely an individual in our entire large population will be found to controvert or deny. But, Sir, did time allow, were not the evening so far spent, I think I would be able prove from the clearest testimony, that our former yellow fevers, as well as the present one, have derived their origin from a foreign source; that the disorder is an exotic, that it is no more nor less than the Bulam fever of 1793, so ably described by the learned Chisholm, by Stewart, Dr. Pym, and others. That this same fever, or a fever of similar attributes, and derived from a similar cause, prevailed some years since at Rio Janeiro; that it subsequently appeared at New Orleans, at Norfolk, at Portsmouth, at Memphis, and is now doing its work on Long Island. Thanks to the vigilance and ability of our Health Officers, its devastations in this latter instance have been circumscribed; and the flight of the inhabitants has limited its sufferers, and rendered its mortality comparatively moderate.

Mr. President, there is an abounding error in the discussions concerning the nature of yellow fever. Fevers of different types and characters have been grouped too often by many writers, both European and American, under one nosological head, and the great pathological distinctions existing between the malignant pestilential yellow fever, (that which is so ably described by Chisholm and Pym, and which has recently raged at Rio, and nearly desolated Norfolk, etc.,) and the fevers of our country as the malignant, intermittent, and remittent, both of cities and of interior districts of the country, have all been confounded together. Shades of difference, or grades, or degrees of violence, have indeed been allowed to occur, but this doctrine is too unitarian either for pathology or for practice. Actuated by this most untenable theory, we find recorded winter cases of yellow fever, yellow fever arising from cess-pools, from vegetable miasms, from animal decomposition, from a septic condition of the atmosphere, evinced by soap and water not mak-

ing a proper lather, and soap bubbles not forming, from the exhalations of new made ground, from the mephitic accumulations of a long circulated bank note, from famished tadpoles, from church-yards, etc., etc. Time admonishes me that I must pass by on this occasion the rattlesnake theory, first published in London, of my old colleague in the University, Dr. Samuel Latham Mitchill. The history of the progress of his mind in the discovery of the analogy between the acid poison of the crotalus horridus and that of yellow fever is among the treasures of modern knowledge. Mitchill is too eminent to be overlooked, and Priestley and Sir Humphrey Davy were not indifferent towards him. I trust I am free from all invectives in making these statements.

According to these discordant views of different authors, the yellow fever, like the witches' cauldron in Macbeth, is doomed to mingle with the most heterogeneous materials. Sir, these causes have never, in my humble opinion, produced a solitary case of yellow fever. The madness of new made ground, seems to have had an effect on the reasoning faculties of the excellent Dr. Miller, no less pernicious than on the type of the disease under which his patients labored. Sir, there has not been a single case of yellow fever ever traced as originating from that vile compound of every species of offal, and of new made ground, the famous Collect, and this fact alone, yields a volume of proof in behalf of the foreign origin of the disease. The fever of Onondaga, of the salts works, is no more yellow fever than it is the yaws. The fever described by that worthy gentleman, Andrew Ellicott, in his notes of his voyage down the Ohio, has for fifty years been cited in numerous books as demonstrative proof, that the yellow fever originated at Galliopolis: it was but the other day, that I read in a recent New Orleans Medical Journal, a quotation from Ellicott's narrative, to aid the writer in his speculations, that yellow fever is a disease of domestic origin, and a product of the interior country; and yet, Sir, full thirty years ago, I published the fact that Mr. Ellicott had at the time of his writing his journal, never seen a case of yellow fever by which he could institute a comparison between the Atlantic yellow fever, and this supposed like disorder of Galliopolis, and that with great frankness he admitted that he was led into the error of confounding the two different types of disease by wrong information. I had his permission to correct the error. I might cite other examples where mischief has been propagated from causes not dissimilar. In the earlier volumes of the *Medical Repository*, the searcher after doctrines, will find several extensive papers on the fevers of the southern States, and cannot fail to encounter among them the communications of Dr. White, of Savannah. It is some time since I read those pages of Dr. White: if I recollect him aright, fevers are a unit, only modified by circumstances. Hence, yellow fever, the strangers' fever, the rice-land fever, etc., are all of like origin, and of like nature. He has discarded the acute diagnosis of Blane, and the no less practical reasonings of Norcum. Yet, when I personally interrogated Dr. White as to his experience in yellow fever, such as we witness among our shipping and sea-boards, he answered, he had never seen a case of the complaint. What instruction can be derived

from the disquisitions of such writers, who possess not even a clinical fact on which to ground their reasonings. Dr. White convinced me, that there is nothing so true that some men will not deny; nothing so false, that some will not affirm to be true. I am grieved while I utter these sentiments; but the history of philosophy, and in particular of medical philosophy, is pregnant with the direful errors which the prevailing theories of the day have countenanced. The acidum pingue of De la Boe, was once a dominant doctrine of the schools; and Lieutaud satisfies us of the caprices of individuals in the surgical inflictions originating from the debaucheries of Louis XV. Truth is often hard to be comprehended, and painful to the recipient. Even the writings of our immortal Franklin, are still enrolled by benighted Spain, in the Index Expurgatorius. There is no end of the novelties which disturb our peace, or provoke our risibles, equally in science and in literature as in matters of the Church, and this declaration is corroborated even by the occurrences of our own hour, as well as of those of former days. While an army of inquirers in pursuit of knowledge, through valleys and on mountain tops are ransacking the elements in search of ozone as the efficient morbific agent, in order to solve the problem of epidemical causes, Mr. Smith, of London, single handed, gives assurances to Lord Ellesmere, but the other day, that irrefragable proofs may be deduced, from documentary testimony, that Francis Lord Bacon is the veritable author of the plays we have heretofore understood as the productions of Shakespeare, and that this mighty creation, instead of being an original, was little more than a scene shifter for the dramas of others. Methinks the Bard of Avon will survive the evisceration as well as did our great master of old, the Father of Physic, an analogous operation. I hope you will pardon this digression. But I will trespass no longer on the precious moments of the Academy.

I sincerely hope that the able Committee will be continued for the still fuller performance of their responsible trust, when I may venture some additional observations on the history and causes of yellow fever. The transition doctrines of the celebrated Rush, the unqualified declarations of Bancroft, and the rhapsodies of Caldwell, deserve notice, and a profitable examination of the cautious and philosophical opinions on the subject promulgated by our eminent countryman, Dr. Dickson, of South Carolina. I reiterate what I uttered at the beginning of our sitting, that the yellow fever is an imported poison; and the pride which I feel as a New Yorker, leads me to repel with becoming indignation the disgrace that "we live in the latitude of pestilence, and that our climate now, perhaps, is only beginning to display its tendency to produce this terrible scourge." I had almost said that it partakes of something more than weakness, thus to asperse the crowning work of a beneficent Providence. Rather let us declare that Almighty God, in his wondrous dispensation, has showered upon our climate his richest treasures, for the security of physical health and mental power. Verrazzano, three centuries ago, observed the sparkling waters of our noble rivers, and speaks of our beautiful atmosphere with enthusiastic commendation. The earliest observers

of our climate, as De Vries, and Van Der Donk, and Colden, and Kalm, have lauded it in strains of almost poetic imagery; and modern writers, who have investigated its claims to so prominent an excellence, have given full assent to the truth of the statements of our primary authors.

CAUSES AND TREATMENT OF IDIOCY.

Mr. James B. Richards read a paper on the causes of idiocy, and the training of idiots. Mr. Richards has been engaged in the training of idiots for the last eight years, and has done much to alleviate the miseries of this class of sufferers. He was for a long time the principle teacher in the Mass. State Asylum for idiots, which, under the superintendence of Dr. Howe, has been so successful. More recently, he opened a private school for idiots in Pennsylvania, which has led, through his instrumentality, to the establishment of a State Institution, in that State. He has lately opened a private institution for idiots, in this city, at the corner of Fifth Avenue and 131st Street, which already numbers six pupils, and bids fair, under his experienced superintendence, to become one of the most important institutions in our city, devoted to the relief of the unfortunate. The following abstract of this paper will prove interesting to the medical reader:

The ancients looked upon the deaf, blind, insane, idiotic, and deformed, as those deprived by the gods of some physical enjoyment, in order that they might be drawn nearer to heaven, and thus become one source of inter-communication between the finite and the Infinite. But Christianity and an enlightened philanthropy have shown us the true relation which exists between these unfortunate members of the human family, and the external and physical world, as well as the internal and moral world. Idiocy is not a mere chance, neither 'is it an arbitrary visitation of Providence; but one of the ways in which a righteous lawgiver' punishes 'transgression.'

It matters not, whether we sin ignorantly or willfully, the result is the same; except it be, that he who sins willfully, has moral guilt added thereto. There are thousands of parents, who never had the least idea that they were at all responsible for the various infirmities with which their children are afflicted. Besides, transmission of disease is not always direct, nor is it always in the same form. There are many ways in which it may show itself, modified as it is by the thousand conditions in which the law may have been violated. Man has been endowed with a mental, moral, and physical nature, and whatever he may do to debilitate the first, debase the second, or pervert the third, by the same ratio does he bring upon himself disease, and draw near that gulf of blank, driveling idiocy, into which he will inevitably bring his posterity.

Let us then, before considering the treatment of idiots, examine some of the causes of idiocy. Among them all, I know of none so prolific of idiocy, as the abuse of the procreative power. I speak not merely of that loathsome habit, self-abuse, but of the too frequent cohabiting of the sexes in the married relation. It is licentiousness in its worst form.

Intemperance, too, leaves its trail behind. I have seen numerous

instances where the effect has been not only to diminish the vigor of body and mind in the parent, but also to entail upon their posterity, chorea, hydrocephalus, epilepsy, insanity, idiocy, and disease in some one of its many forms. We need but to look into our alms-houses and hospitals, to see an exemplification of this fact. One of the most striking instances which I have seen, was that of the case of two idiotic children, both from one family; they came under my notice while teaching in the Massachusetts State School for idiots, in the year 1848. The father and mother were healthy, and well developed; they came from good stocks, and were not related by blood. They had several children, up to the time of the birth of the first, who was a very beautiful and intelligent girl, the father had never used any alcoholic drink; it was not long, however, before he formed a strong passion for it, and used it so freely as to be intoxicated a great portion of the time. This drunken career lasted for a period of four or five years; and, during this time, his second and third children, the idiots above alluded to, were born. After the birth of the second idiot, the father in one of his sober moments, feeling conscious that it might be possible that he was the author of all this woe which had been brought upon his family, resolved that he would no longer curse his progeny by indulging his appetite for strong drink, and immediately signed the temperance pledge; since which, he has had no more idiots, but healthy and well-developed children. I could relate other cases where the result has been to debase the child to such an extent, that even in his walking, he tottered about like one under the influence of intoxicating drinks. I believe it to be also one of the worst of practices, for mothers during the period of lactation, to accustom themselves to the use of beer, and other stimulants, for the purpose of increasing their milk. And am glad to find that our best physicians now deprecate its use altogether.

Among other causes, which I have now time merely to mention, is the intermarriage of relatives. Cousins from opposite branches of a family, might marry with a possibility of safety to their children; but if those on the same side of the house marry, especially if they be of the same temperament, they are likely to concentrate in their progeny, their predispositions to any particular disease, whether of body or mind.

Another cause of idiocy, is the low condition of the physical organization of the father at the time of the act of procreation, caused sometimes by too great physical or mental labor, as is frequently the case among our laboring population, or as is sometimes shown among that class of our fellow-citizens who devote themselves so continuously to literary pursuits. Nature requires a harmonious, and not a one-sided development, of either body or mind.

Low and innutritious diet has been given by some writers upon this subject, as a cause of idiocy. This is probably not a cause to any great extent in this country; yet it has been ascertained to be a very prominent one in some of the populous districts of Europe and Asia.

There has, I think, been too much stress laid upon the sudden fright of the mother, during the first months of pregnancy, as one of the causes of idiocy. Yet there are a few well-authenticated facts

where idiocy has been shown to be the result of fright; as was the case at the bombardment of Landau, mentioned by Baron Percy. Families living for a great length of time in low and damp districts, have been very much afflicted with cretinism and goitre, as has been found in the mountainous districts of the Alps and Pyrenees. The same has been found in the mining districts of England, where the sun rarely or never shines, and where the air has become vitiated by depriving it of its due proportion of oxygen before it is taken into the lungs.

In reviewing this subject, this fact, then, more than all others, stares us in the face, viz.: That like begets like, and that unless we wish to have sickly, puny, deformed children, we must see to it, that, in our person, we observe the laws of life and health.

Idiocy, by itself considered, is not a disease; it is simply the result of an arrested development; or, as Esquirole says, "it is a condition in which the intellectual faculties have not been developed; or, have not been sufficiently developed to enable the person to receive the instruction common to those of his age and station in life."

In this definition, I mean to include, not only the pure idiot, but also all that class of imbeciles who cannot be developed by the ordinary methods of instruction. They may be divided into three distinct classes, viz.: 1st. Those not having sufficient amount of brain to produce a normal condition. The most striking cases of this class which I ever saw were the so-called Aztecs. The age of these children, by their dentition, did not at all agree with that given by the gentleman who had them in charge. The following facts I had from a prominent gentleman of the bar at Philadelphia. I have no doubt of their truth:

They were brother and sister; the father was a very insignificant man, both mentally and physically. He was of one-quarter negro and three-quarters Indian blood. The mother was a large and powerful woman; she was of one-eighth negro and seven-eighths Indian extraction. They lived in the village of Jocotal, State of San Salvador, Department of San Miguel, Nicaragua. They had several children, among them the above mentioned dwarfs. The boy was born January 8, 1845, and the girl a little more than two years after. Dr. J. Mason Warren, in a paper giving an account of these children, in 1851, gives the following measurements and weights: boy—hight, thirty-three and three-fourth inches; weight, twenty and three-eighth pounds; circumference of head, thirteen inches; distance from ear to ear, over the top of the head, eight inches: girl—hight, twenty-nine and a half inches; weight, seventeen pounds; circumference of head thirteen inches; distance from ear to ear, over the top of the head, eight inches. These are the pure idiots of Spurzheim. So far as my observation goes, extending over more than four hundred cases, I have found but few children of this class. The 2nd., are those whose imbecility is the result of a low physical organization. There is no malformation of the cranium; on the contrary, their heads are of full size and well developed. In this class, will be found at least three-fourths of all cases of imbecility. Here, too, are found the epileptic, hydrocephalic, and scrofulous cases. They are wanting in the vital forces of the system. They require larger lungs, and better digestive and secretive

organs; besides, the heat of the system is too low for a proper preservation of the animal economy. The 3rd class, are those whose imbecility arises from a functional derangement of the nervous organization, united frequently with chorea, and requiring, too, in some cases, the most careful and judicious training, to save, if possible, the child from insanity; to which there is frequently a marked tendency.

The necessity of special schools for ameliorating the condition of the imbecile, is abundantly proved, from the fact that there are so large a class of persons in the community who, not being in a normal condition, cannot be taught as children in a normal condition are. Yet, from the fact that they have, until within a few years, been looked upon as persons without mind; or, as Blackstone says, as one that hath no understanding from his nativity, and, therefore, is, by law, presumed never likely to attain any; few have ever dared to undertake their training and development. The first record which we have, where an attempt was made to educate an idiotic person, was in the year 1800; a wild boy, supposed to be about seventeen years of age, was found in the forest of Aeyron, in France. He was brought to Paris for the purpose of testing the truth of the doctrine of the materialistic school, of Condillac, which was so much in vogue in France at that time. It was asserted by Pinel, that the lad was an idiot, and that the attempt to educate him would prove a failure. Itard, the physician to the institute for the deaf and dumb, took him into his house, so says Seguin, and taught him for six years. The experiment resulted, as was predicted, a total failure. And it was not until 1828, that any proper step was taken to open a school. This was done by Mons. Ferrus, President of the Academy of Medicine, and Inspector-General of the lunatic asylums of France. He organized a school in the hospital at the Becetre, where had been gathered together a number of idiots from the streets of Paris. His main object was to have them taught habits of cleanliness and order. In this he succeeded so well that, in 1831, M. Falret opened a similar school for girls, in the asylum for women, in La Salpetriere. Dr. Voisin was among the earliest who took an interest in these efforts. In 1839, when he was made physician of the hospital of Becetre, he rearranged and enlarged the school for idiots. There is also much credit due Dr. E. Seguin, for the completeness of a course of calesthenic and gymnastic exercises, which have been so widely copied in the European and American schools. About the year 1837, a school for idiots was opened in the asylum for deaf mutes in Berlin, by Saegart. It has been highly spoken of, by Dr. P. Earle and others, who have had an opportunity to visit it.

Schools for idiots, in this country, are of recent origin. By a resolution of the Legislature of Massachusetts, passed April 11, 1846, the Governor of the State was authorized to appoint a Commission to ascertain the number and condition of Idiots in the Commonwealth. This Commission consisted of Dr. S. G. Howe, Horatio Byington, and Dr. G. Kimball. A partial report was made by the Chairman, March 15, 1847. The final report was made February 26, 1848. Both of these reports are marked by *great research and ability.* The result of this was, the passage of a bill (May 8, 1848,) appropriating money

for the opening of an experimental school for the education of idiots. This was the first practical movement for the establishing of schools for idiots in this country. This Institution has been, from the first, under the general superintendence of Dr. Howe. The amount appropriated by the State for grounds and buildings, is $25,000 Private donations, something more than $5,000. Annual appropriation for the support of the school is $6,000; number of pupils, about 40. Says Dr. Howe, in his report, after the school had been in operation one year:—

"The result, thus far, seems to be most gratifying and encouraging. Of the whole number received, there was not one who was in a situation where any great improvement in his condition was probable, or hardly possible; they were growing worse in habits, and more confirmed in their idiocy. The process of deterioration in the pupil has been entirely stopped—that of improvement has commenced; and, though a year is a very short time in the instruction of such persons, yet its effects are manifest in all of them.

"They have all improved in personal appearance and habits, in general health, in vigor, and in activity of body. Some of them can control their own appetites in a considerable degree; they sit at the table with the teachers, and feed themselves decently. Almost all of them have improved in the understanding, and the use of speech. Some of them have made considerable progress in the knowledge of language; they can select words printed on slips of paper; and a few can read simple sentences. They have gained a knowledge of many objects, their names, colors, forms, dimensions, etc. But what is most important, they have *made a start forward.* They have begun to give their attention to things; to observe qualities, and to exercise thought. The mental machinery has been put in operation, and it will go on more easily, and more rapidly, in future, because the greatest difficulty, that of getting into motion from a state of rest, was overcome when it began to move.

"It has been demonstrated that idiots are *capable of improvement,* and that they can be raised from a state of low degradation to a higher condition. How far they can be elevated, and to what extent they may be educated, can only be shown by the experience of the future."

New York was not long in following her sister State in this work of charity. The first appropriation was made by the Legislature, July 10, 1851. Dr. H. B. Wilbur, who had already opened a private school for idiots, in July, 1848, in the town of Barre, Mass., was called to take charge of the State school, first established at Albany, but since removed to Syracuse. This is now the most flourishing institution of its kind in the country. The grounds and buildings having cost more than $80,000; the annual appropriation being $18,000, and the number of its pupils nearly one hundred and thirty, and still increasing. The success of this institution is abundantly shown by the increase of its pupils and the amount of legislative appropriation.

The Pennsylvania Training School for Idiots, established at Germantown, Pa., July, 1853, grew out of a private school, opened by Mr. Richards, February, 1852. The Legislature has appropriated $20,000 for

grounds and buildings, and about $13,000 have been raised by private subscriptions. The school at present numbers about twenty-five pupils, and is now under the charge of Dr. Joseph Parrish.

This includes all the State institutions at present in operation in this country. Besides these institutions above mentioned, there are two private schools, of a similar character. One, established at Barre, Mass., by Dr. Wilbur, has since passed into the hands of Dr. Geo. Brown, whose devotion to the work has been crowned with great success. The one at the corner of 131st Street and 5th Avenue, Harlem, New York, was commenced by Mr. Richards in July last. This school is strictly a private one, designed to meet the wants of a class of persons who would not be likely to avail themselves of the advantages of State Institutions. Here the children have the advantages of a large school, combined with the quietude and social influences of a home.

From observations made during a visit to similar institutions in Europe, in 1848, and the experience had during his connection with the Massachusetts State school, for the three years of its infancy, as well as that gathered in originating and managing the Pennsylvania training school for idiotic and feeble-minded children, has proved to him, beyond a question, that much, very much can be done towards arousing the intellects of this class of children, and bringing them more nearly to a healthful, normal condition, provided their education be commenced at a sufficiently early age.

The spark of intelligence is there; buried, it may be, beneath, such a load of physical deformities or feebleness of mental organization, or functional derangement, as to make it impossible that it should ever see the light, unless some earnest person who thoroughly understands the nature of the obstacles to be overcome, and character of the mind with which he is to deal, will take them gently yet firmly by the hand, and lead them out of the maze in which they have been completely lost.

It will be quite obvious to any one acquainted with the number and condition of imbeciles in this community, that schools for their instruction must, in time, be very greatly increased.

From what has already been said, it will be perceived that in the treatment of these children we have to deal with dormant faculties, requiring us to present truths or facts in such minute details as will be likely to be appreciated by them, and act as a gentle, healthful stimulus to their beclouded minds, and arouse in them the faculties of sensation and perception. They are wholly unlike children of a normal condition—they have hands, feet, eyes, and ears, but they rarely ever use them, except it be to keep them from immediate destruction; they never make these organs subserve the great purpose for which they were given us—that of self-improvement. Usually their sole desire is to sit undisturbed in some quiet corner, eating or sleeping, as inclination may dictate. We invariably find them wanting in *facts*. They have no data—nothing from which they can draw a conclusion, or upon which they can base a proposition, however simple that conclusion or proposition may be. The great psychological peculiarity or distinguishing feature of idiocy is, that they have but few or no *wants*. They have no aspirations or desires—no soul-longings—nothing that points

to a here or a hereafter. How then, comes the question, are we to treat these imbecile children? What course of training is to be pursued to insure their development?

In answer, each case has its peculiarity, and requires to be studied independently of every other. Yet, generally, we find that a thorough course of vocal and physical gymnastics, accompanied by a proper hygienic treatment, to be the first requisites. It is important that attention be paid to bathing, exercise, diet, and sleep. Experience has proved that these children cannot bear as frequent bathing as those of a normal condition; once a week in winter, and twice a week in summer will be all that they can sustain. They should every day take at least three or four hours of exercise in the open air, in connection, if possible, with some sports and plays, in order to call forth as great a flow of spirits as possible. The greatest care must be paid to diet. It must be highly nutritive, and thoroughly cooked. The breakfast and dinner should be generous, and the supper light. Meats must be used as often as once a day. As to sleep, they require from 10 to 12 hours per day. It is in this way that the recuperative energy of the system is aroused and put in action; and if it can be successfully done, there is great hope that the child's mental capacity can be so developed as to restore him very nearly to a normal condition. New pupils will frequently find much to learn in the play-room. In school they must go through a thorough course of gymnastic exercises, from learning to stand erect, by placing their backs against an upright wall, to learning to fence and dance, and use all their muscles with ease and energy. Different muscles require to be educated differently. Sometimes we find a child with its limbs more or less paralytic, with the nerves of sensation inactive. In such cases, we require them to go through the various natural movements of creeping and walking, by taking hold of their feet and hands, and moving them for them, in an automatic manner.

Next, we come to the development of the sensorial region. This is done by a course of object lessons best suited to the development of the different senses. Of sight, by forms and colors; hearing, by intonations of the voice; touch, by comparing objects of different weights, temperatures, densities, and different inequalities; taste, by pungents, acids, and sweets; and smell, by aromatics. Let me add that these drills must not be conducted by always using the same object to teach the same thing. The little child of the normal condition, who may have been standing by and hearing the drill, has seized upon the idea and run off with it, applying it in all his sports and plays—while our little imbecile is very likely to suppose that the *name* of that piece of iron we placed in his hand was hard, and the name of the cotton, soft. Perception is the next natural step to sensation; and imitation, memory, comparison, order, and judgment, naturally follow. We must, at the same time, nourish the feeble flame of the emotions and affections, forgetting not to correct the habits and teach the proprieties of life.

Children thus trained, have not only an increased capacity for usefulness, but also for happiness.

A statement of two or three cases, will give some idea of the results of our training.

Case 1.—On the 17th of October, 1848, while teaching in the Massachusetts school for idiots, a little boy, by the name of Walker, was brought into the school. He was about five and a half years of age. He had no command of his lower limbs; he neither walked, crept, or rolled over when placed on the floor. In whatever position he was laid, he remained even for hours together. Mastication, with him, was out of the question. His mother told me that she fed him almost exclusively on milk, purchasing for him, as she said, a gallon per day. He driveled profusely; emitted his excrements, apparently without any knowledge. Had no knowledge of things, their names or uses. Touch, taste, and smell, were apparently wanting. He could see, but never observed. And the only sense that seemed to be awake, even for a time, was that of hearing, and this only when some lively air was played on a musical instrument. His head was small, much smaller than that of other children of his age. To use the language of Dr. Howe, "he laid almost like a jelly-fish, as though his body were a mass of flesh without any bones in it." His case was, without doubt, one of congenital idiocy; although his imbecility may have been very much aggravated by the extremely injudicious course pursued with him during the early period of his infancy. He had been subject to occasional but slight epileptic attacks. This being the *lowest case* which could be found in Massachusetts, (after an examination of between five and six hundred cases,) to test the feasibility of the plan to develop and educate idiotic children, it was thought best to undertake his training, although it seemed more like a work of creation than of education. The most sanguine friends of the cause, threw discouragements in the way. I at first applied myself to the task of ascertaining, if possible, whether he had any faculty which could be appealed to. The sentiment of affection was still dormant. I was obliged, therefore, to go yet further back.

Having often noticed that an experienced nurse, would endeavor to arrest the attention of a new born infant, not by showing it some pretty toy, but by *talking to it as if it were an intelligent being*, I took this for my guide—and, preparing myself for the task, laid upon the floor an hour each day, reading aloud to this imbecile boy, as if he understood me perfectly. This practice was pursued for several weeks; till, one day, instead of lying on the floor, I sat in a chair. In a few moments, I saw, by his making an effort to move, that he had missed me. As soon as I again placed myself by his side, he stopped fretting, and appeared to be pleased. Here then, I had a "fulcrum on which to rest my lever." At the next lesson instead of reading aloud, I read to myself. He noticed my silence, and, slowly putting his hand to my mouth, attempted to open my lips. Upon reading aloud again, he expressed his pleasure by a smile. This practice of reading and talking, was steadily persevered in for a number of weeks; during which time I was enabled to gain his confidence, little by little; and during the four years which followed, he more than answered my highest expectations, becoming a marvel to his friends and those who had previously known him. At the end of that time, he could read intelligently and walk about like other children.

As he never yet had manifested an idea of a being higher than his teacher, I tried by repeated lessons to give him one concerning God, by telling him that God made the apples, peaches, and pretty flowers; that He made the sun, and that He gives us the rain. I then asked him what he thought of God? his reply was, "good God." I then asked, how he felt towards that "good God?" his answer was as natural as it was beautiful, "I should like to kiss Him."

This case, will also serve for encouragement to those parents, who may think their children altogether too hopeless to receive benefit from such Institutions. Let me assure them, that I never yet, during my whole intercourse with these unfortunates, found one too low for improvement—and I have often seen cases that might have been materially improved, had they been brought to us in season.

Case 2.—"George R. was a lad about seven and a half years of age," I copy from minutes made at the time,* "his hight, when erect, was three and three-fourths feet, head extremely small, the greatest circumference of head fourteen and nine-tenth inches; distance from ear to ear, ten and forty-five-one-hundredth inches; chest very narrow, limbs long and slender, complexion fair, hair light and eyes dark; his usual position, when standing, was like that of an ape, with his head bent as far forward as possible, and his arms hanging listlessly before him. His senses were generally active; though the power of observation was very limited. His habits were filthy as that of an infant. He used only one word distinctly, which was 'no.' His temperament was very active, exhibiting great vitality and energy. He was very passionate, destructive, and selfish, beating all the children about him, and taking away their playthings, and appropriating them to his own use. He was considered by his friends, and all who saw him, as utterly hopeless."

Such was this boy, two years and a half ago; nor was there any reasonable hope of his improvement. In the language of his father, "there seemed no hope of his learning to speak, or read, or take care of himself."

But now a great and happy change has come over him. He is decent in all his habits, and cleanliness has not only become a custom, but a want. He is neat in his dress; he sits at table, and conducts himself properly, using a knife and fork, and eating as other children do. He makes his bed, sweeps the floor, assists in scouring knives, and does various little *chores* about the house, with great good humor and sufficient skill. But the most gratifying result is, that he BEGINS TO SPEAK!

He has learned to read simple sentences, and does read understandingly, and with great pleasure and pride, such books as Bumstead's primer. That he understands what he reads, and that it awakens in his mind the same feelings and affections as it does in other children, the following anecdote, related by Mr. J. B. Richards, his teacher, will show:

"One day, in reading about a little girl who fell into the water, George looked up with a countenance full of anxiety, and exclaimed,

* Mass. Report for 1851.

inquiringly, *girl—fell—water?* Yes, said I; and he seemed very sad, till I told him to read on, when he came to the sentence, 'the large black dog jumped into the water and pulled her out.' He seemed to fear that it was not so, and said, inquiringly, *pulled—her—out?* Yes, said I. Then, repeating his question, as if it were hardly possible, he said, *pulled—her—out?* Yes, I told him, pulled her out of the water! He immediately dropped his book, and, turning round, threw his arms round the neck of a little boy who sat near, and hugged and kissed him, crying and laughing alternately for joy."

"George R., who knew nothing, could do nothing, observed not the first rules of decency, and was utterly helpless, and who, doubtless, under the usual system of neglect, would have remained so, or, as is universally the case with neglected idiots, would have become, if possible, worse, takes the visitor's hand, talks—articulating distinctly, and goes to the letter frame upon the table, and not only selects and arranges the letters to spell any common short word, but, without aid, selects and arranges the letters, and forms the sentence *Our Father who art in heaven, hallowed be thy name;*—divine words, which are now familiar to the eye, and which, if he continues to make the same progress, will soon, we may hope, reach the soul of the poor rescued child. This boy was lately allowed to make a short visit to his parents; and when, at the expiration of the time, his teacher went to bring him home, the father began to thank him, and to tell him how much he was pleased with his progress. '*George*, now,' he said, '*plays* with the other boys; he plays *like* the other boys.' He would have gone on, but he could only put his handkerchief to his eyes,—he could say no more."*

The complete success which has been obtained, by two years' training and instruction of this lad, is very gratifying and very important, because it establishes, beyond all question, the fact that even idiots of the lowest mind may be improved. The most skeptical person, who sees George, must pronounce him to be a born idiot; and, if he pays a moment's attention, must confess that he manifests intelligence and capacity such as no uninstructed idiot, no idiot left to the ordinary course of life, ever could attain.

It is true that the class of pure idiots, to which George belongs, is small; it is true, also, that his organization is a remarkable one; the high nervous temperament, and the fineness of which are so apparent in him, give him great advantage. His dwarfed brain is so active, that it enables him to do what, with an ordinary one of the same size, he could not do. It is like a machine, which makes up in speed what it wants in power. Nevertheless, there he stands, redeemed from his degradation, claiming kindred for himself and his class with humanity; and if others can be elevated as much in five years as he has been in two and a half, they surely ought to be.

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* Christian Examiner, 1851.

SECTION ON SURGERY.

REGULAR MEETING, September 8, 1856, DR. DETMOLD, *Chairman.*

Paracentesis Abdominis.—Dr. BATCHELDER reported a case of paracentesis abdominis. The patient was a woman. The effusion began eighteen months ago—eight months since he tapped her and drew off a large quantity of fluid, but there was nothing peculiar occurred. After the operation, a tumor of large dimensions could be detected in the right side of the abdomen. In five weeks, the abdomen began to be refilled, attended with great pain in the left side and under the short ribs. He saw her, a week since, and found much distension, with fluctuation of a character to leave him to suppose the fluid was gelatinous. He punctured the abdomen with a large-sized trocar, and fluid escaped by the side of the instrument. The trocar passed its whole length, and penetrated a solid substance—it moved quite freely—but little fluid escaped, which was gelatinous. The probe was passed six inches, meeting something firm—about a quart of fluid was obtained. He considered the dropsy due to a multilocular cyst.

Dr. DETMOLD remarked that, in performing this operation lately, he withdrew, through the puncture, six inches of omentum, which the canula had seized in the slit, in its extremity upon withdrawing the trocar. He now uses the French instrument, the extremity of which is whole.

Stricture of Prostatic Portion of Urethra.—Dr. POST related the particulars of a case of stricture of the prostatic portion of the urethra. The patient never had gonorrhœa. On passing the catheter, it could be felt from the rectum to enter the prostatic portion of the urethra, and engage in the stricture. The stricture was overcome by gradual dilatation.

Dr. DETMOLD inquired if the stricture was not, more likely, due to disease of the prostate. Dr. POST thought not, as it was overcome in the usual manner by dilatation.

Partial Paralysis of Soft Palate.—Dr. PARKER related a case of partial paralysis of soft palate. The patient was a boy, æt 19, who had recently suffered from inflammation of the throat, which was treated with gargles. He now speaks like a person suffering from fissure of the palate, and drinks regurgitate through the nose. He suffers no pain, but has dimness of vision. The soft palate is not changed in appearance, and the patient has feeling in it. The disease seems to be paralysis of the motor branch of the fifth pair of nerves supplying it.

Dr. GARRISH related his own case, which has some resemblance to that of Dr. PARKER's. He was first attacked with acute laryngitis, threatening œdema of the glottis, which was followed by regurgitation of fluids. He got better, but vertigo, dimness of vision, with muscæ volitantes and numbness of the extremities came on. He has not recovered yet from the last symptoms.

Removal of a Tumor of the Uterus.—Dr. DETMOLD related an operation—the removal of a tumor situated in the cavity of the uterus. It had been once previously removed, twenty-four years ago. He dilated the os uteri, and the tumor protruded. Upon seizing it with hooks they

tore out, and he had to remove it in pieces. The portions removed had the appearance of muscular fibre. On being submitted to microscopical examination by Dr. Dalton, it was found to be composed of the muscular fibre of the uterus. He also mentioned a second case in which the same operation gave rise to metritis. This resulted in a free discharge, and the patient got well. He believes that in this case the tumor suppurated and was discharged. This form of tumor is very rare.

October 5, 1855.

A Case of Spontaneous Mortification.—Dr. Enos related the following case: Mrs. L., æt. 31, the mother of four children, the youngest being four years of age. Since the birth of the last child she has had two miscarriages, and her health has been poor. She says she has been rather weak and nervous, but still able to attend to her domestic affairs. On the 19th of March, '55, while reaching up to the top of a window to tie a curtain, her right hand was suddenly seized with numbness, or a sensation of awkwardness, she said, "as if her right hand were her left hand," and then it became paralyzed. In five minutes the pain was intense and the hand was cold. It was rubbed, soaked in hot lye, and a sinapism put along the hand and fore arm. Vesication was produced in fifteen minutes. For forty-eight hours the pain was so great (during this time she took no anodyne) that she could not keep the hand still a moment. After this the pain was allayed by anodynes. She took of McMunn's Elixer from thirty to eighty drops several times a day. On the third day the fingers began to be discolored, and the hand was swollen; on the fifth, a blister was put along the fore arm; on the eighth the black discoloration had extended half way to the elbow, just above which the attending physician, on the ninth day, put a blister around the entire arm.

I first saw her ten days after the attack. She was sallow, rather inclined to fat, tongue dry and slightly coated, respiration hurried, a little cough, pulse from 130 to 140, great thirst, no appetite, bowels torpid, urine scanty and high colored; pain in the right hand great, unless allayed by an opiate. The hand was gangrenous, but no distinct line of demarkation was formed. She had been supported by quinine, beef tea, etc. Line of demarkation formed on the 13th, near the middle of the fore arm. Charcoal and yeast poultice applied to the hand and arm. On the 15th, in the presence of Drs. Minor and Garrison, I amputated, (no anæsthetic was used) near the elbow, after having given the friends rather an unfavorable prognosis. Dr. M. applied the tourniquet, although no pulsation could be felt below the axilla. No blood was lost, except about a spoonful which oozed from the skin—no artery bled. The muscular tissue was softened, and somewhat infiltrated with pus. The general treatment was continued about the same. The stump did well, discharging some pus for a week, when it had nearly ceased, and the integuments healed. Her pulse went down to 100, and she felt much more comfortable, and slept without an anodyne. At this time, however, she had a severe chill, followed by a high fever—thirst great, tongue dry and brown, low, muttering

delirium, and all the symptoms of pyemic fever. She had a rigor or two every day. She sunk gradually, and died just two weeks after the operation, and four from the first attack.

Unfortunately no post mortem examination could be obtained, and we are left to infer, as best we may, the cause of the obstruction of the axillary artery, and the consequent loss of the limb and life of the patient.

It may have been an acute attack of arteritis, forming a fibrinous clot, thereby obstructing the artery. Or there may have been an atheromatous affection of the artery existing prior to the sudden attack, which attack may have been caused by the floating of some detached atheromatous products into the artery thereby plugging it. It is highly probable that some such degeneration of the arteries had taken place, from the apparent tendency to fatty degeneration exhibited by the appearance of the woman, and by the muscles of the amputated arm. And I think it quite probable that the internal and middle coats, being thus previously weakened by disease, were ruptured in the act of forcibly reaching upward, and that they then so folded in upon themselves as to arrest the circulation; as in the two specimens at St. Bartholomew's, spoken of by Mr. Paget, in which the internal and middle coats were ruptured by a blow. In these cases, the coats folded in upon themselves and so obstructed the circulation as to cause mortification. The rigors and fatal symptoms that come on after the first week, from the amputation, were probably owing to purulent absorption from the stump, or to a fresh inflammatory attack of the larger blood-vessels near the heart.

Dr. Van Roth suggested the existence of atheroma, and the separation of a mass which, lodging in the artery, would give rise to these symptoms.

Dr. Post would rather refer them to rupture.

Dr. C. D. Smith related a case of spontaneous gangrene in a female, æt. 17, who had lived poorly, and recently recovered from an attack of typhus. The limb was amputated above the knee, and gangrene attacked the stump. On dissection the arteries were found plugged, and the veins inflamed.

Tegumentary Melanotic Tumor.—Dr. Post exhibited a specimen of melanosis removed from the tip of the nose of a woman aged 70. The tumor grew external to the cartilage, and appears to be entirely tegumentary.

Gonorrhœa in Children.—Dr. Post stated that he had under treatment a boy aged 7, suffering with gonorrhœa, contracted from a girl aged 10.

Double Bursal Tumors of Knee.—Dr. C. D. Smith related a case of double bursal tumors of the knee, which had become consolidated. He designed to remove them, as they interfered with the patient's kneeling.

Dr. Detmold considers these operations very dangerous, and advises not to disturb such growths. He had a case in which the bursa was burst and proved fatal.

Strangulated Femoral Hernia.—Dr. Detmold reported a case in

which the patient had the appearance of cholera—when first seen. She was a servant, and, on going to bed at night, complained only of headache. She was seized with vomiting of feculent matter, collapsed, and died before morning. On examining the body, a strangulated hernia was found in the groin; this was detected before death, but not sufficiently early to give relief. She had never made any complaint of it before, and on inquiry it appears that her breath was so offensive that the other servant girl would never consent to occupy the same bed with her.

Autopsy.—Intestines injected—large intestines contracted to size of little finger—the tumor was found divided by the epigastric artery into two parts. This artery would have been severed in an operation.

Ovariotomy.—Dr. PARKER mentioned a case of ovariotomy which he lately performed upon a lady, æt. 23. On exposing the tumor, it was found so adherent that he was compelled to give up the operation, and simply draw off the fluid, which amounted to eight quarts. The sac was entirely emptied, and she recovered from the operation. The dropsy is again returning, and he proposes to establish a fistulous, opening by introducing a canula, and then employing injections.

Injury of Elbow Joint.—Dr. PARKER had recently a case of injury of the elbow joint, of which the diagnosis is doubtful. The patient, a male, sixteen years of age, fell, twenty days since, striking upon the hand. He is inclined to regard it as a longitudinal fracture of the humerus, with separation of one condyle.

Phymosis.—Dr. BATCHELDER related a case of phymosis of one and a half years duration, in a patient aged thirteen. The aperture of the prepuce is now thickened and diseased. This hardened portion was removed, but the mucous membrane is also in the same condition. He inquired if congenital phymosis is not usually followed by cancer; or if cancer of the penis be not often preceded by phymosis; such was his experience. Drs. Parker and Detmold thought not.

Mortification in Hernia without Symptom.—Dr. PARKER attended to a case of very large hernia, which mortified so suddenly that the pulse was not perceptibly affected. The patient ate and drank as usual. The tumor was freely laid open, but he died on the fourth day.

Dr. DETMOLD had seen a case where the hernia descended to the knee, and the patient was cured. He has had a case where the appendix vermiformis was in the sac.

Dr. PARKER has had a case which resulted in an artificial anus. The case ended fatally by the patient's taking a false step, thus rupturing the adhesions, and discharging the contents into the bowel, eleven weeks after the operation.

Discharge of Substances Swallowed.—Dr. ENOS exhibited a slate-pencil which was swallowed by a child eighteen months old, and passed by the anus thirty-six hours after. In another child, which swallowed a Chinese coin, the foreign body passed in about the same time; in both cases castor oil was administered.

Dr. BATCHELDER explained the passage of foreign bodies through

the alimentary canal. He mentioned a case where a person swallowed six false teeth, with the plate. They were three or four weeks in passing the pyloric orifice of the stomach, and were delayed about the same time at the ileo-cœcal valve.

Perineal Section.—Dr. Enos related a case of retention of urine from stricture in a young man who had gonorrhœa eight months before; the catheter passed down to the membranous portion, but could not be farther introduced. Dr. Minor cut down upon the stricture in the perineum, and gave free exit to the water. The patient recovered.

Dr. Detmold would have advised puncture by the rectum. This is a harmless operation in such cases, and in twenty-four hours the inflammation would subside, and the patient could then pass water by the urethra. When there are old fistulæ the case is different, and it is proper to cut in the perineum.

Non-Union of Fractures in healthy Persons.—Dr. Detmold has under treatment a fracture of the tibia and fibula in a female sixty years old and perfectly healthy, where, after six weeks, there is no union. He has seen the same result in healthy young men.

SECTION ON MIDWIFERY.

Regular Meeting, July 21, Dr. I. E. Taylor, *Chairman.*

(*Reported by* Dr. J. Lewis Smith, *Secretary.*)

The Condition and Appearance of the Breasts as Indicative of Pregnancy and Uterine Diseases.—Dr. Worster stated that he thought too much reliance was placed by physicians on the appearance of the breasts, in determining the existence of pregnancy. Signs supposed to indicate gestation not unfrequently occurred in other conditions of the uterine system. We recollected having treated a patient, whose breasts were enlarged in consequence of disease of the cervix uteri. The enlargement continuing till the healthy condition of the womb was restored. Such cases had shaken his confidence in the signs of gestation furnished by the breast.

Dr. Gardner agreed with Dr. Worster that the value of these signs had been overrated. He had repeatedly treated patients whose breasts, in consequence of uterine disease, presented the appearance common in gestation. He once examined a lady who expected to be confined in two or three months. There was progressive growth of the abdomen, the nipples and papillæ were protuberant, the areolæ were well marked, and she complained of pain and swelling of the breasts, but her catamenia had not ceased. She requested an examination because there had been no fœtal movements. The sequel proved that she was not pregnant. While believing that the mammary signs are not peculiar to gestation, he still held that something more than simple amenorrhea is required to produce them. He has noticed also that the areolæ were broader in pregnancy than when occurring in any other condition.

Dr. Hubbard remarked that he had derived great assistance from inspection of the breasts in cases of suspected pregnancy. If, in addi-

tion to the enlargement, the areolæ, the prominent papillæ and nipples, he found the cuticle upon the latter peeling off, and other signs corroborative, he did not, in ordinary cases, hesitate to pronounce the patient pregnant.

Dr. LIVINGSTON stated that he had seen areolæ around the nipples of a virgin, attributable to masturbation, and in his examinations at the Demilt Dispensary, he had frequently noticed elevated papillæ and scurf upon the nipples in girls of an erotic temperament. In advanced phthisis, also, he believed we commonly find deeply colored areolæ, especially in those who have borne children.

Dr. BLAKEMAN agreed with Dr. Livingston that there is usually deep discoloration of the breasts in female consumptives. His experience had taught him to be cautious in pronouncing a patient pregnant, from the appearance of the breasts. He was once called to examine a lady in the upper walks of life, who presented many of the signs of gestation; the areolæ especially were distinctly formed, and yet she was not pregnant. The value of the areolæ as a diagnostic sign, is greatly impaired by the fact that they vary so much, according to the age and complexion of the patient.

Dr. SHANKS stated that frequent excitement of the sexual passion, even when no uterine disease is present, will cause prominence of the nipples and papillæ. They are commonly well developed in prostitutes.

Dr. GARDNER added that he had known the papillæ and nipples to project from temporary excitement, as from the examination of a physician.

Dr. TAYLOR remarked that after the second or third month he thought gestation could be determined with certainty in nearly all instances, from the appearance of the breasts; the areolæ were larger, and the papillæ more developed than in uterine and ovarian diseases. If a case were examined at intervals, and the changes in the breasts were found to be more and more developed, there could be little doubt of the existence of pregnancy. He regarded the existence of moisture at the base of the nipples, and the peeling off from the sides as important signs. He placed great reliance, too, on the appearance of inflation, known as Gregory's test, but these appearances are found in false conception as well as normal pregnancy.

The Influence of the Breasts over the Uterus and Ovaries.—Dr. LIVINGSTON stated that he had known abortion to occur in consequence of irritation of the nipples, and Dr. GARDNER remarked that a similar case had fallen under his own observation.

Dr. TAYLOR stated that irritation of the breasts, as by a sinapism, tended to bring on the catamenia, and he alluded to an empiric who had gained considerable celebrity by treating cases of suppressed menses by measures directed to the breasts.

Symptoms of Uterine Disease Relieved by Purgatives.—Dr. GARDNER gave the history of a young lady who had lately applied to him for treatment. Her general health was poor, her bowels much constipated, and her abdomen distended as if in the seventh or eighth

month of gestation. She had had her catamenia for three years, had leucorrhœa, and was supposed by her former physician to have some uterine affection. Dr. Gardner prescribed podophylline, sulphate of iron, and aloes in doses sufficient to keep the bowels open. With this treatment, the appetite returned, the swelling subsided, and her health was gradually and permanently restored.

Hysterical Attacks Induced by Masturbation.—Dr. Hubbard related the case of a young lady of twenty-three years, who was subject to attacks of an hysterical nature. She was tall, spare, and anemic. Her pulse was natural, but her catamenia were irregular, her limbs cold and perspiring, her aspect cadaverous, and her mental powers enfeebled. He suspected, from her peculiar physiognomy, that masturbation was the cause of the attacks, and, on inquiry, was informed by the patient that she had practiced this for years, and that the attacks were most likely to occur immediately after the indulgence. By reformation in her conduct the seizures are becoming less frequent.

Meeting, August 18.

Cancer of Uterus.—Dr. Worster narrated the case of a lady of forty-five years, whom he suspects to have cancer of the womb. The disease seems to be confined to the cervix uteri, which feels hard, and is enlarged. He had thought of applying the actual cautery.

Dr. Taylor remarked that in nearly all cases of uterine cancer, the physician is not consulted till ulceration has taken place. If, in this case, no ulceration could be detected, he should hesitate in making a diagnosis, nor did he approve of the application of hot iron to a carcinomatous uterus. Instead of benefiting, he believed it more likely to aggravate the disease, and hæmorrhage is apt to result from its use.

Dr. White stated that the cervix uteri might become so enlarged by repeated labors as to resemble a diseased condition. The cylindrical speculum, too, would sometimes give a wrong idea of the size of the cervix, by expanding the os uteri. He recollected having once attended a case somewhat similar to that described by Dr. Worster. There was not only enlargement of the neck of the womb, but ulceration on one side in consequence of an acrid thin discharge. This patient recovered by alterative treatment.

Dr. Gardner gave the history of a case of cancer of the womb, which he had lately treated. The disease was extensive, finally proving fatal. The patient experienced a gnawing sensation at the pit of the stomach, for which she took bismuth and soda, and a large number of lumbrici were expelled. She complained, too, of intense pain under the pubis and in the back, and for a considerable period before her death, the neck of the bladder was paralyzed, causing incontinence of urine. Her stools, too, were attended by a profuse loss of blood. At the autopsy, the peritoneum was found injected and covered with fibrin, the uterus was entirely destroyed, the vagina and labia were swollen, and upon the vaginal mucous surface spiculæ were found of a bony appearance.

Dr. Worster stated that these spiculæ were probably crystals of a salt deposited from the urine. He had seen a similar deposit in a case of vesico-vaginal fistula.

Labor Retarded by a Short Funis.—Dr. GARDNER also gave the history of a case of retarded labor. The presentation was favorable, the os was dilated, and the membranes ruptured. During three days the head descended with the pains, but immediately receded. The child was finally expelled, when it was found impossible to ligate the cord, on account of its shortness, till the placenta came away. The length of the funis was twelve inches; the child weighed only four pounds, although in the former confinements, the children had been of full size.

Dr. WHITE remarked that he had known similar retardation to occur from the cord being wound around the child's neck, and Dr. TAYLOR stated that he recollected having seen, in Paris, a funis which measured only six inches.

Flooding from Premature Detachment of Placenta.—Dr. TAYLOR then related the case of a lady in labor with her fifth child, to whom he was called in consultation. She had lost blood profusely, and on his arrival he found her with blanched cheeks and feeble and frequent pulse. The os uteri was partially dilated, and the head was partially engaged in the superior strait. After an ineffectual attempt to deliver by the forceps, turning was accomplished, but in such a way that the backs of the mother and child corresponded. The head was then removed by the forceps, applied posteriorly to the child. A point of interest in the case is the manner in which the forceps were applied. Books recommend their introduction along the front of the child, but he had known three instances where they were successfully employed in the manner followed in this case.

Difficult Labor from Pelvic Deformity.—Dr. TAYLOR also detailed the particulars of a case of difficult labor, occurring to a dwarf four feet and two inches high. It was impossible to introduce the hand to turn, so that the forceps were applied after incision of the cervix. Alluding to the use of the forceps, he said, he had known in one instance a remarkable result from their application. In consequence of pressure of the blade over the pes anserinus, spasmodic action of the muscles of the face on the corresponding side occurred during the twenty-four hours following delivery.

Dilatation of Os Uteri by Chloroform.—The question being asked as to the proper method of dilating the os uteri, Dr. WORSTER recommended the moderate use of chloroform for this purpose. He lately attended a patient who had been in labor four days, and yet the os was not larger than a crown piece. By means of the anæsthetic, and by requesting the mother to use all her energies during the pains, delivery was effected in forty-five minutes. But it should be borne in mind that too free inhalation will retard labor by suspending uterine contractions.

SECTION ON MATERIA MEDICA

REGULAR MEETING, AUGUST 22, 1856, DR. JOEL FOSTER, CHAIRMAN.

[Reported by Dr. E. H. JANES, Secretary.]

Thuya Occidentalis.—DR. BENEDICT remarked that recently he had in four instances successfully employed the thuya occidentalis as an

emmenagogue. His attention was first called to the subject by Dr. Stephen Smith, who had derived beneficial effects from its use when other means had been repeatedly tried, and failed to afford relief. Dr. B.'s experience in its employment was limited to these four cases, in all of which the ordinary method of treatment had been unsuccessful; yet the suppressed function in every instance was fully re-established shortly after he commenced the administration of this remedy. He related the particulars of one case, in which suppression of the menses had followed an attack of typhoid fever, and was of nine month's duration. During this period the patient had submitted to the various methods of treatment in vogue, without deriving the least benefit. After taking six doses of the thuya she felt pain in her back and limbs, head-ache and other slight febrile symptoms, and after the eighth dose the function became fully established, and the patient has since enjoyed good health. Though successful thus far, his limited experience in its use does not permit him to speak with as much assurance as he would like; his object is to call the attention of the profession to this subject, in order that it may be more thoroughly tested. This tree is known by the name of arbor vitæ, called, also, white cedar, and is found in most of the northern and middle States, either growing wild or cultivated for ornament. The form in which it is administered is that of a saturated tincture, prepared with the dried leaves, by displacement. This, given in doses of a tea-spoonful three times a day, he has found to produce the desired result in about three days.

Dr. Foster inquired whether the remedy acted from its tonic or balsamic properties?

Dr. Benedict replied that the last case that he treated was cholorotic, and the patient was speedily relieved by this treatment, from which he infers that much is due to its tonic effects. He has not, however, given the subject sufficient attention to satisfy his own mind concerning its modus operandi.

Dr. Foster remarked that he felt much interested in this subject. There are cases where a want of vital power will not allow us to promote this discharge, and where the administration of tonics seems to be the only rational method of treatment. There are so many different classes of emmenagogues, acting in different ways, and many of them uncertain in their action, that we too often use them empirically. When there is simply a suspension of the functions of the uterus, he has found the vol. tinct. guiac., given in doses of a tea-spoonful in a wine-glass of milk, three times a day, to succeed in his hands better than any other remedy. He has often seen it afford relief in dysmenorrhœa.

Injections in Dysentery.—Dr. Benedict then stated that he had in many instances found the syrup of rhatany to answer a better purpose than starch and laudanum; he had also used it with the same success in a case of diarrhœa following an attack of bilious colic, that had been treated with croton oil. His formula was,

℞ Syr. Krameriæ ---------- ʒiij
Tr. Kino ---------- ʒj ℿ

Dr. Foster has not so much faith in injections in the treatment of

dysentery and diarrhœa as many others have, but among them all he considers the watery extract of opium, dissolved in cold water, by far the best. His formula for an adult is,

℞ Ext. Opii. Aqu. ..... ʒj
Aqua Puræ ..... ℥ss ♏

of this he gives the amount of two or three grains, at the same time insisting strongly upon maintenance of the recumbent posture. For children, we should be extremely careful how we use opium, in any form. From two to six drops of the above mixture, according to the age of the child, may be added to a tea-spoonful of cold water, administered occasionally. He finds this treatment to be more successful in quieting the tenesmus, and relieving pain, than any other form of injections. The advantage it possesses over the ordinary mixture of starch and laudanum is, that the alcohol contained in the latter often creates irritation sufficient to cause the whole to be expelled, or, on the other hand, the starch may so protect the mucous membrane of the rectum as to greatly retard the absorption of the opium.

Dr. Cooke related an instance of having prescribed six opium pills, each containing two grains, one to be used occasionally as a suppository, while some pills of calomel were to be taken internally; by mistake the six pills of opium were taken at one dose, and one of the calomel pills was introduced into the rectum. The patient, after sleeping for nearly thirty-six hours, with, occasionally, a slight interruption, awoke entirely relieved. Dr. Cooke further remarked that he had, in the country, often employed the epilobium angustifolium in form of a strong decoction, and derived much benefit from it in the treatment of dysentery. In chronic cases, Dr. Foster has derived benefit from the bark of sumach, in form of a decoction, prepared with milk. He administers it in doses of a table spoonful every hour or two.

Large Dose of Opium Not Proving Fatal.—Dr. Hart then related the particulars of a case where twenty grains of opium had been taken without any serious result to the patient. The case was that of a lady suffering from a severe otitis, for which she had been leeched, purged freely with calomel, after which a blister was applied behind the ear. The pain still continuing severe, a lotion was directed, composed of one scruple of opium to one gill of boiling water. This, after cooling sufficiently, was to be used several times during the day, according to the severity of the pain. He also ordered a saline mixture to be taken immediately. By a mistake of the nurse, the saline mixture was used for the wash, and the infusion of opium, together with the infused powder, administered internally at one dose. When the Doctor was called, he found his patient wild, pupils contracted, respiration slow and difficult, pulse slow and full, no sleep, and total absence of pain. As the time in which benefit could be expected from an emetic had already passed, pediluvium was ordered, together with cold applications to the head, and a brisk cathartic. Under this treatment, followed by stimulants, the patient speedily recovered.

Dr. Davis remarked that the reason for so large a quantity of opium being unattended with serious consequences was, that the nervous

system had received so strong an impression from the severe character of the pain attending the disease, as to render it in a great degree unsusceptible to the action of the opium. When the pain is acute, the opium may be administered in proportion to the severity of the symptoms. The impression created by the pain being antagonistic to that resulting from the use of opium, the dose should be repeated until the former is counteracted and overcome, hence the proper dose of an anodyne is that quantity which relieves pain, produces the effect for which it was administered. In connection with this subject, Dr. Davis made some remarks concerning the antagonistic effects of different medicines to each other. He said it had been shown that many of the poisons may be used as antidotes to other poisons which produce opposite symptoms: for instance, if the poison contracts the pupil, we may look for an antidote to some poison, the action of which is to dilate the pupil, hence, belladonna has been suggested as an antidote for opium.

He had observed similar effects in the administration of different remedies, particularly digitalis, which we often employ for the purpose of reducing the frequency of the pulse. Owing to the accumulative and depressing effects of this agent, we are compelled to observe much caution in its employment; these effects, however, are, in a great measure, obviated by administering it in combination with opium, the stimulating properties of which, he believes, in some degree, controls the action of digitalis, perhaps by preventing its absorption. In the treatment of phthisis, one great object to be accomplished is to reduce the frequency of the pulse, and he has found this method the only one by which he can at all times succeed in obtaining this desirable result. He has employed the wild cherry for the same purpose, but is often disappointed in its effects, as it often fails to produce the result for which it is administered. This subject of the antagonistic effects of different medicines, opens a wide field for investigation, which, if thoroughly explained, may reveal many valuable therapeutical facts hitherto unknown.

Dr. Davis has found an infusion of peach leaves, prepared with boiling water, a valuable agent in reducing the frequency of the pulse in phthisis, and in every way equal to the wild cherry.

Dr. Hart believes the wild cherry to contain some sedative properties, independent of the hydrocyanic, and the fact of the above infusion being prepared with boiling water, and producing the same effects which we derive from the infusion of wild cherry, which is directed to be prepared with cold water, to prevent the evaporation of the acid, confirms him in this belief. He has never seen the effects of hydrocyanic acid resulting from a long-continued use of the wild cherry.

Dr. Foster has made great use of the wild cherry, and has generally found it to answer the purpose for which it was administered. He has found it especially useful in phthisis.

Dr. Hart has found turpentine, administered in doses of from fifteen drops to a drachm, an excellent remedy in passive hæmorrhage.

Hæmorrhage from Extracting Teeth.—Dr. Janes mentioned a case of hæmorrhage occurring three weeks after the extraction of an

upper bicuspid. In this instance, a freezing mixture had been applied, and, although the extraction of the tooth was unattended with pain, the patient described the application of the anæsthetic as excessively painful, as was also the reaction. Three weeks after, in consequence of sloughing, severe hæmorrhage occurred, which was finally controlled by the application of astringents and pressure. This custom of freezing the gums for the purpose of extracting teeth without pain cannot be too severely censured.

MEDICAL AND SURGICAL SOCIETY.

REGULAR MEETING, Sept. 6, 1856, Dr. B. W. McCREADY, *Chairman.*

(Reported by DR. C. R. AGNEW, Secretary.)

Case of Rupture of the Uterus, not opening into the Cavity of the Peritoneum.—Dr. MARKOE stated that he had been called in the night to Mrs. ———, with the request to bring obstetrical instruments, as the physician in attendance supposed there was rupture of the uterus. Found a young woman, in second labor, and was informed that everything had progressed favorably until the head had come well down into the pelvis, and was beginning to present at the inferior strait, when she was suddenly seized with a violent and most distressing pain across the lower part of the abdomen, followed immediately by great sinking of the pulse, cold, clammy perspiration, exhaustion, and almost complete cessation of the expulsive pains, which previously had been regular and strong. This had occurred about two hours previous to the visit of Dr. M. At the time of the visit, patient was cold, pale, bathed in perspiration, entirely pulseless, almost speechless, and presenting every indication of approaching death.

On examining the abdomen, two distinct tumors could be felt; one below, as large as the womb at full term, the other above, and about the size of a child's head. The tumors, although distinct, were apparently connected by bands, giving the impression of a large fibrous tumor attached to the upper part of the womb.

The smaller tumor had suddenly appeared at the moment of supposed rupture.

No part of the child could be felt through the abdominal walls. Uterine action occurred occasionally, but feebly, and without making any impression on the head, which still presented at the inferior strait, and had not materially retracted. On consultation, it was determined, in view of the moribund condition of the mother, and the fact that two hours had elapsed since supposed rupture, that we would not resort to the forceps, unless some evidence of the child's vitality could be obtained. On careful auscultation, no pulsation of the fœtal heart could be heard, nor could any cerebral pulsation be felt at the fontanelle.

The mother died a few hours after. On post mortem examination, it was observed, on opening the abdomen, that there was no blood in the peritoneal cavity. The two tumors were distinctly seen. The lower one presented the evidence of a large quantity of coagulated blood,

distending and pushing forward the peritoneum. On cutting the distended peritoneum, coagula turned out, revealing the body of the child, which had escaped from the ruptured uterus without making its way into the peritoneal cavity. The child being removed, the upper tumor was found to be the womb itself, contracted upon the placenta, which had remained within, and still completely attached.

A transverse laceration existed, of the anterior half of the neck, just above its junction with the vagina, through which the body of the child had escaped, but the peritoneum not giving way, had been stripped from the surface of the uterus and bladder, and had thus formed over the body of the child the tumor that had been felt in the usual place of the womb, and being packed full of coagula, had prevented a recognition of the parts of the child.

There was no evidence to the unaided vision of any diseased condition of the uterine tissue.

The child was unusually large.

CASES OF TRACHEOTOMY.

Three Cases in which Tracheotomy was Performed.—Dr. Buck laid before the Society a group of three cases upon which Tracheotomy had been performed.

Case 1.—The first case, that of a woman, æt. 45, to whom he had been called in June last. For a week previous to the visit, she had been suffering from a "hoarse cold," and a "croup-like cough," for which, however, she did not obtain advice, neither did it cause her to intermit usual occupations. On the fifth day, dyspnœa and a most distressing night compelled her to seek advice. On the eighth day, Dr. B. met the family physician in a visit, and found the patient greatly distressed by extreme dyspnœa, which prevented the recumbent posture; both inspiration and expiration were accomplished with very great difficulty. She was importunate for relief, and greatly apprehensive, though, strange to say, her voice retained a good degree of force and clearness, and the epiglottis, and aryteno-epiglottic folds were free from œdema; nor would she acknowledge the existence of pain, or assign her distress to any sense of obstruction. The fauces and neighboring parts were free from exudation. There was scarcely any cough, and the air passages seemed free from signs of accumulated secretions. Pulse 106, regular, and of a fair strength. Deglutition sometimes difficult. Exacerbations of dyspnœa occurred from laryngismus.

Performed tracheotomy. Introduced a large sized tube, when a violent paroxysm of coughing ensued, which dislodged some viscid, yellowish mucus. After the mucus had been removed, a solution of arg. nitr. gr. xv. to the ounce, was poured into the trachea through the tube. In about an hour, respiration and deglutition became easy, and her entire condition in delightful contrast with previous suffering.

From the date of the operation, however, her symptoms evinced clearly, that the disease was extending into the air passages. Rhonci were heard on both sides posteriorly, and a copious, viscid, opaque secretion was taking place, which at times required severe efforts of coughing for its expulsion. The solution of nitrate of silver, increased

to the strength of two scruples to the ounce, was introduced through the tube, three times in twenty-four hours, for several days. Inhalations of vapor of water were frequently employed with benefit.

On the 9th of August, the date of last intelligence, the wound had healed, respiration was natural, and patient was resuming her accustomed activity.

Case 2.—The second case, that of supposed laryngitis. The subject, a seafaring man, æt. 36, had always enjoyed good health up to the present indisposition, which had commenced, on the voyage from Liverpool to New York, in a sore throat, cough, and loss of voice. At the end of the third week, on reaching port, his case presented the symptoms of laryngitis, for which the family physician employed energetic but unavailing remedies.

This state of things lasted for about six weeks, when suffocative paroxysms, which had existed more or less from an early period, increased in frequency and severity, so as to threaten at times instant death. At this juncture, or nine weeks from the first attack, Dr. B. was requested to see the case, and to go prepared to perform tracheotomy. But, being out of town, Dr. Watson saw the patient, and, finding him comparatively easy, did not deem the operation immediately necessary.

When Dr. B. arrived, the patient was sitting up in a chair, his head inclining forward, and his elbows resting on the back of another chair; voice reduced to a whisper, and so it had been, uninterruptedly, from the commencement of the attack; respiration, when passive, comparatively easy—after conversation, stridulous and noisy; the recumbent posture avoided from dread of suffocation; deglutition difficult, often causing strangling; inhalation through the nostrils often impossible; seat of obstruction referred by patient to a point below the larynx; no pain on pressure over larynx. By digital exploration, laryngeal orifice normal; no exudation about fauces. Pulse 120—small and weak, but regular. Dread of movement being so great, patient was not exposed to auscultation or percussion. Tracheotomy was performed without the aid of ether; patient, meanwhile, in the sitting posture, as the recumbent was impossible. On opening the trachea, it was noticed that no whizzing sound followed, and that the dyspnoea was not relieved. A sponge probang being inserted, no deeper obstruction could be felt; the next morning, however, a most copious expectoration of mucus occurred, and induced some relief. Thirty-six hours after the operation, however, patient died.

An autopsy revealed an aneurism of the arch of the aorta, which encroached upon the trachea at a point about an inch above its primary bifurcation, and had greatly diminished its calibre; the tumor had pressed more upon the left division, and so had impeded the entrance of air into the left bronchus, more than into the right. The communication between the tumor and the artery was of a triangular shape, extending downwards, to within a finger's breadth of the semilunar valve, while its superior and posterior angles were only separated from the orifice of the arteria innominata by a space of half an inch. Its aspect, in relation to the ventriculo aortic channel, was such,

that the column of blood from the ventricles must have passed chiefly into it. The cavity of the sac was very capacious, and sent out several pouched prolongations, two of which inclosed the trachea, as in parenthisis. Atheromatous patches existed elsewhere in the aortic walls.

Around the orifice of one of the coronary arteries, was a pouch-like depression, capable of admitting the extremity of the forefinger, and at the commencement of the descending aorta, a similar expansion. The heart was considerably hypertrophied, particularly the walls of the left ventricle. The lining of the trachea corresponding to the point of encroachment, though entire, was of a brownish red.

Case 3.—The third case—that of a malignant tumor, involving the œsophagus and larynx; the extent of the disease unknown until revealed by autopsy. Mr. ——, æt. 70, of good constitution and very regular habits, began to be affected, in June last, with a slight hoarseness, unattended by any symptoms of other derangement; his general health remained good, and he put up flesh.

About July 1, he experienced difficulty in deglutition, which gradually increased, until the use of solid food frequently induced strangling and severe cough; even fluids sometimes produced a similar effect.

About August 1, he had to abandon the use of solids on account of an obstruction, which he described as existing at a point below and behind the larynx. Inspection and digital exploration of the fauces and circumjacent parts, failed to detect anything abnormal. In the neck the whole chain of lymphatics along the track of the great vessels on the right side was enlarged, and some of them much indurated; while rising somewhat from behind the sterno-clavicular articulation on the same side, was a considerable tumor; the left side of the neck was free from lymphatic enlargement; no tenderness of the tumors, on handling. Cough and free expectoration of viscid mucus; respiration commencing to be sonorous, with rough laryngeal noise, and dyspnœa. An attempt to pass a stomach tube failed on account of an obstruction in the œsophagus, although a similar attempt, on a previous occasion, had succeeded. His strength commenced to be severely undermined from want of nutrition, and through the violence of the cough.

The post clavicular tumor was, meanwhile, rapidly enlarging, so that it now extended above the articulation three fingers' breadth, in close contact with the œsophagus and trachea. The pressure of the tumor upon the trachea was crowding it towards the left side; and the dyspnœa, which was habitually great, became so alarming, by paroxysms, as to threaten instant suffocation.

The only relief from these distressing symptoms was afforded by fanning, which was kept up constantly by three or four persons around his bed. Deglutition had become impracticable, from the suffocation produced whenever it was attempted. The patient, as well as his relatives were extremely urgent that something should be attempted for his relief. So great was his distress that they felt willing that an operation should be undertaken, even though he might not survive its performance.

Without the aid of any anæsthetic, the requisite incisions were made.

By persevering efforts, and with the most careful dissection, with the finger nail and handle of the scalpel, that portion of the tumor which lay in contact with the trachea, and emerged from behind the clavicle, was removed, leaving an extensive chasm, bounded on the left by the exposed trachea, extending upwards as high as the thyroid cartilage, and downwards behind the sternal end of the clavicle, while the muscles covering the cervical vertebrae formed its posterior wall. In every direction portions of the morbid growth could still be felt. The dyspnœa was not relieved. The trachea was still pressed forwards, though the deflection to the left side was relieved.

As the dyspnœa still continued, an opening was made in the trachea, as low down as the sternum would allow. A tri-angular piece was removed, and a large tube inserted, the effect of which was the immediate relief of dyspnœa, and restoration of quiet easy respiration. The patient, however, having survived the operation only seventy hours, expired as gently as under ordinary circumstances, and without any return of suffocative symptoms.

About twenty-four hours after the operation the wound began to take on erysipelatous inflammation, and soon to show signs of sloughing. Which state of things, superadded to the condition of extreme debility, induced by the previous process of slow starvation, led to death.

On post-mortem examination, it was found that the diseased growth consisted of two parts—one made up of swollen, indurated glands in the localities alluded to above; the other, originating in the anterior wall of the œsophagus, and projecting into and filling up its canal.

The upper limit of the tumor was on a line with the lower edge of the cricoid cartilage, from which point it extended down the tube to the distance of four inches, and occupied about two-thirds of its circumference.

On exposing the cavity of the trachea, the opening made in tracheotomy was found to have involved the 4th, 5th, and 6th rings, and to be opposite to the lower half of the tumor, which so encroached upon the trachea as to diminish its calibre one-half.

NEW YORK PATHOLOGICAL SOCIETY.

REGULAR MEETING, April 9, 1856, Dr. WATTS, *President.*

(Reported by E. LEE JONES, M.D., Secretary.)

Heart—Opening in Mitral Valve.—Dr. SEWALL exhibited a *heart*, more for the purpose of eliciting information for an explanation of the symptoms during life, than for its pathological interest.

Mrs. M., æt. 70. For a year or more previous to October, 1855, when she was first seen, had been troubled with palpitations, especially on exertion, accompanied now and then with cough and bloody expectoration to a small amount, dyspnœa, pains in chest, and œdema of ankles, with moderate peritoneal effusion. At times, paroxysms of considerable severity occurred, with an aggravation of these symptoms. In general, however, was up and able to attend to light work, when, with quiet, the œdema would disappear, and she would be quite comfortable. She was found in an ill turn, with pallid countenance, quick

small pulse, much dyspnœa, and cough, with sputa tinged with blood. Considerable œdema was observable about feet and ankles, and there was some peritoneal effusion. An appearance rarely met with, described by Latham in his work on Diseases of the Heart, was beautifully depicted. It consisted in a bright vermilion tint investing the pulps of all the fingers, thence extending in fainter lines down their inner surface, and terminating in brighter spots of half an inch diameter over the palms of the hands. The impulse of the heart was discernible to the eye. It was not, however, lifting, but diffused itself over much space. The organ transcended its natural boundaries, and, to the ear, gave a loud bellows murmur, marking both sounds, very evident over all the anterior chest, but most distinct posteriorly. Valvular insufficiency, with eccentric hypertrophy, was supposed to exist.

Treatment consisted in mild anodynes and diuretics. A careful regimen was enjoined. Much improvement occurred, so that, in two or three weeks, the patient was about her light work again. With occasional relapses, she continued from October to the middle of February, 1856, much in the way described. During all these months, there was no abatement in the bellows murmur, save such as was traceable to changes occurring in the action of the heart, which was now stronger, and now weaker, according to the general bodily condition. On twenty-five or more examinations, at intervals of a few days, its characteristics were always the same. There was no ascites remaining, and but a trace of œdema.

In the middle of February, about a month before death, she began to fail. The heart's action became irregular, tumultuous at times, and the pulse at the wrist was not synchronous with the beatings of the organ. Sometimes it was 40, again 80 and 100 and more, feeble, fluttering, then stronger. Still there was the old murmur, modified by, but persistent through, all these changes. The dyspnœa increased, the oppression grew, the serous effusion gradually invaded the upper limbs till the hands and feet were tense, and as if ready to burst. The peritoneum also became largely distended. Three weeks before death she became icterode. The color deepened, and at the last was intense. Death took place on March 12, the mind being clear to the end.

Autopsy twenty-four hours after death.—Strong rigor mortis; lungs healthy, save for trifling old pleuritic adhesions on right side; about a pint of yellowish fluid in either pleura; pericardium moderately distended, contained three ounces; no adhesions; heart rather large and flabby; left ventricle and auricle much dilated, with thinning of walls; no valvular disease anywhere, save perhaps very slight thickening of the aortic valves; water poured into the aorta passed them in drops only; in one of the mitral valves there was a small cribriform opening about the size of a marrowfat pea; aorta and large vessels perfectly healthy and free from deposit; spleen and kidneys healthy; liver engorged and of deep bistre color, natural size; examination no further pursued.

In reference to an opening in the mitral valve, Hope says: "Mitral regurgitation often occurring through a chink so small as not to impair the strength of the pulse, frequently yields a perfectly soft, though

possibly loud bellows murmur, for loudness and softness are by no means incompatible."

Dr. WATTS referred to similar cases, reported in the *New York Journal of Med. and Surg.*, edited by Dr. SWETT, somewhere about 1839 and 1840, of which but eight numbers appeared.

Criminal Abortion—Peritonitis.—Dr. T. C. FINNELL presented the *uterus* removed from a woman upon whom abortion had been produced, and who subsequently died of *peritonitis*, with the following account:—

Matilda McCarthy, aged nineteen, being about four months advanced in gestation, was desirous of having abortion produced. She was advised to use a vapor bath of pennyroyal and tansy, and remain in the bath at least twenty minutes, then walk to Forty-second Street and back again to her residence, in Spring Street, as quickly as possible; also to drink freely of gin and tansy before leaving the house. This was on the 7th of March. On returning from her walk, she complained of great distension of the abdomen by flatus, inability to walk, and a feeling of great prostration. At the end of a week, labor pains came on, and she was soon delivered of a dead fœtus. On the third day after delivery, she seemed well enough to be up. At the end of the week she was seized with a chill, followed by fever, which terminated in death, on the 28th of March, three weeks after delivery. The *autopsy* showed extensive peritonitis, with adhesion of all the abdominal organs to each other. About a pint of pus was in the pelvis, surrounding the uterus.

Rupture of the Heart of a Dog.—Dr. W. C. LIVINGSTON presented the heart of a Newfoundland dog, supposed to have been killed by leaping from a window in the fourth story of the building in which he was usually kept. He was found early one morning, on the walk directly opposite, dead. As he was always regarded a healthy and a remarkably intelligent animal, no reason could be assigned for his suicidal leap.

The body bore no external marks of injury, save a slight escape of blood from the mouth. Upon taking off his hide, a contusion was revealed upon his left haunch, such as might readily be caused by a fall from such a hight. The brain and medulla spinalis were quite healthy, as were, also, all the abdominal organs, save a number of recent superficial lacerations seen in different portions of the liver.

On opening the thorax, the right pleuro-cardial septum was found broken down, a large clot filling the pericardium, and about two quarts (more or less) of fluid, occupying the right pleural cavity. Upon carefully raising the clot from its position, a laceration was discovered in the walls of the right auricle, on its anterior aspect, about an inch in length, with jagged and very irregular margins, through which protruded portions of three or four filamentary worms, resembling very closely the "gut" of the silkworm used by anglers. The heart was now separated from its connections and carefully examined, when ten of these parasites, varying in length from six to ten and a half inches, and about a third of a line in diameter, were found to occupy the right auricle and ventricle, and a single specimen was found in the pulmonary artery.

Prof. DALTON, who very kindly examined the specimen, with the view of determining its characteristics and zoological position, considers it a hitherto undescribed species of spiropteræ. He (Prof. D.) exhibited to the Society the genital organs of the male, as seen under the microscope, showing the two penes and convoluted testes surrounding the straight intestinal tube. He also remarked that the sexes were about equally divided, and that the males were the smaller of the two, having also a distinct coil in the anal extremity.

A preparation was here shown, belonging to the museum of the "College of Physicians and Surgeons," labeled "A dog's heart filled with worms, from Hong Kong, China." The two specimens appear quite similar.

Dr. ISAACS remarked, that a number of years ago, while in the city of Baltimore, he examined the heart of a dog, which died from the effects of an operation for the removal of the spleen, and in that case the heart was filled with apparently the same species of worm. Dr. Isaacs also added that, in his case, the animal had previously exhibited symptoms of disease. He was short-breathed, and considered asthmatic. Here, too, the parasites occupied only the right side of the organ.

Necrosis from Ulcerative Stomatitis.—Dr. BIBBINS exhibited four specimens of *necrosis*, obtained at the Nursery Hospital, five years since, from *cases* of *cancrum oris*. The disease, in one instance, involved the superior maxillary bones on either side of the symphysis, terminating fatally; in the other three, the lower jaw, from the angle to a point near the middle, ending in recovery. The gangrenous was a sequence of ulcerative stomatitis, beginning at the margin of the gum of the tooth, adjacent to the part of the cheek affected. Patients were between two and a half and four and a half years of age, of marked strumous diathesis, with greatly impaired constitutions, from repeated attacks of disease during their stay in the institution. Removal of one or more teeth, and the thorough application to the congested portions with a swab, doing as little violence as possible, of a wash composed of sulphate of copper and powdered cinchona and water, made three or four times a day by a faithful Dutch nurse, who laid the children across her lap, with their heads depending so as to admit a full light upon the region to be stimulated, probably produced the favorable results.

The opinion was advanced that cancrum oris may occur independent of direct mercurial agency, for ulcerative inflammation of the mouth tending to gangrene, was not unfrequently seen in children who had taken no medicine for three or four months, having been during that time in the Nursery for the well, upon the island.

REGULAR MEETING, April 23, 1856.

Rupture of Pulmonary Valve.—Dr. CLARK presented a heart removed from a patient of Bellevue Hospital, accompanied with the following history:

Ann Ryan, domestic, aged 53; admitted to Ward 47 of Bellevue Hospital March 29. With the exception of having had the small-pox

and typhus fever, the patient had always been tolerably healthy till about four weeks before her admission, when, after an exposure to cold, she was attacked with diarrhœa, which continued till her admission. Three weeks before her admission, while in the act of lifting a heavy tub, she felt something give way under the left shoulder, and immediately fainted. On coming to her senses about an hour afterwards, she felt a severe pain in, and violent palpitation of the heart. Through the remainder of that day and the succeeding night she had frequent fits of dyspnœa, and for the two following days was confined to her bed; but at the end of that time she was able to get up and walk about the room; she continued able to do so for about a week or ten days, when she was obliged to keep her bed again, from growing weakness.

At the time of her admission she complained of pain in the right hypochondriac region, diarrhœa, want of appetite, cough, palpitation of the heart, and great dyspnœa on exertion. The heart was beating at the rate of 196 per minute, the pulse could be felt but not counted at the wrist. The respiration was 26—cough quite troublesome; the expectoration, which was scanty, consisted of mucus streaked with blood. The tongue was covered with a thin yellowish fur. The apex of the heart beat in its normal position, and the area of dulness was not increased; a slight murmur could be heard with the first sounds most distinct over the base; the pulsations were so rapid that it was impossible to say whether or no there was any diastolic murmur. The respiratory sounds natural, with the exception of an occasional sibilant rhonchus.

Ordered, Hoffmann's anodyne and ammoniated tincture of valerian. Whiskey was given moderately, and a mustard plaster put on the right side.

March 30.—The patient felt somewhat better than on the previous evening; had several short naps during the night; had four scanty watery evacuations from the bowels, and vomited once a considerable quantity of yellowish green matter; pain in the side relieved by the mustard plaster; physicial signs not changed; pulse 188. The diarrhœa continuing quite troublesome, ten grains of blue mass were ordered at night, to be followed in the morning by castor oil and laudanum. Half a grain of morphine was ordered at bedtime.

March 31.—The patient slept better than usual, and had no passage from the bowels during the night, but vomited several times; in the morning coughed up several mouthfuls of dark bloody matter. Physical signs as before; pulse 172. Ordered hydrocyanic acid to quiet the stomach; but that producing no effect upon the vomiting, lime-water and milk were ordered in the afternoon, which checked it. Stimulants continued.

April 1.—The patient slept a little through the night. In the morning, the bloody expectoration had become quite copious. At the base of each lung a submucous crepitus could be heard, but no dulness; pulse 188. Dr. Clark saw the patient in the afternoon, and thought the murmur was most distinct half-way between the base and apex of the heart.

April 2.—The patient slept rather better than usual the night previous. Though she felt some better in the morning, the expectoration became more profuse, and seemed to be almost pure blood. The crepitus could be heard more distinctly, and over a larger space than the day before, and some dulness, upon percussion, was found at the base of each lung, most marked on the right side; pulse 172. The diarrhœa again became troublesome, but was readily checked by opium.

April 3.—The bloody expectoration became more profuse, and the patient began to grow gradually weaker. The physical signs were not changed. The stimulants were continued, and moderate doses of morphine given.

April 4.—About 11 o'clock, the patient grew suddenly worse; the pulse was imperceptible at the wrist; the hands and feet became cold; the forehead was covered with a cold perspiration. She was extremely restless, and unable to lie down more than a minute or two at a time; the bloody expectoration was more copious than the day before. Over about two-thirds of the lower part of the left lung behind, and over a considerably greater extent on the right, sub-crepitant râles could be heard. On both sides in front sibilant and sonorous râles.

The heart was beating at the rate of 144. Carbonate of ammonia and whiskey punch were freely administered, and in a short time the patient was easier, and continued so till evening, when her respiration became much less frequent than before; at 12 P.M., they were reduced to 8 per minute; the pulse was 92, and could easily be counted at the wrist; the hands and feet were warm, but the patient was in a semi-comatose state; the coma became more and more profound, and the respirations slower and slower, till 4½ A.M., when they ceased altogether.

Autopsy, thirty hours after death.—Decompostion commencing; surface of chest and abdomen quite green. On opening the chest, the lungs were found adherent to the costal walls by old false membrane. The cavity of the right pleura contained about six ounces of serum, deeply colored with blood; the left contained about four ounces of a similar fluid. The lungs were every-where crepitant except a small portion of the anterior edge of the left, about the size of the first joint of a man's thumb, and a spot about the size of a large pea in the same lung, which were solidified by an apoplectic effusion. Liver congested. Spleen small, and firmer than natural. Kidneys congested. The other abdominal organs were healthy. The heart was very flabby, and paler than natural. On the pericardium, near the base of the heart, were several patches of recently effused lymph, looking like sanded paint. The mitral, aortic, and tricuspid valves were perfectly healthy. There was some atheromatous matter in the coats of the pulmonary artery; there was a small rupture, about a line or two in length. The muscular tissue of the heart was found, by a microscopic examination, to be fatty.

Pneumonia—Fistulous Opening of the Neck communicating with Left Lung.—Dr. FINNELL exhibited, for Professor Bedford, a portion of the *left lung*, in a state of *pneumonia*, removed from a child four

months and a half old, who died on the 14th of April, 1856, in consequence of a communication between the apex of the left lung and a fistulous track, the outer opening of which was in the posterior portion of the neck, a little to the left of the second cervical vertebra.

The child was born on the 26th of November, 1855, after an ordinary labor of twelve hours. At the time of his birth, he was a remarkably healthy and vigorous infant, was nursed by his mother, and continued perfectly healthy until early in February, when his bowels became much deranged, in consequence of the improper character of the mother's milk. A wet-nurse was obtained. The derangement of the bowels ceased, and the child continued to enjoy its usual good health until the 25th of February, when, without any apparent cause, it screamed every time it was moved, and appeared to be in great distress. The child's bowels were in good order; the milk of the wet-nurse was excellent, and agreed with it, the child taking at all times freely of the breast, and thriving under its nourishment, the only unnatural feature in the case being the extreme suffering of the infant, on the slightest movement, more particularly of its head. Repeated examinations were made, but nothing could be detected to account for the suffering until the 3rd of March, when a small tumor was detected on the upper portion of the neck, on the side of the second cervical vertebra. A slippery-elm poultice was immediately ordered, and in two days afterwards distinct fluctuation being felt, the abscess was opened, and there escaped a wineglass of purulent matter. The child was immediately relieved, and ceased to cry on motion. The abscess continued to discharge freely, and it was quite evident that fistulous openings were forming in the neck. On the 9th of March, a solution of the sulphate of zinc, gr. j to f℥j of water, was thrown daily into the sinuses, with some apparent good effect; but the discharge still continued, and the sinuses were evidently extending. On the 15th of March, the infant was attacked with *scarlatina simplex*, which, however, soon yielded. The sinuses, one rather obliquely and to the right, the other downward and forward to the left, continuing to increase, I felt some anxiety about the case, and requested Dr. Mott to see it. On the 2nd of April, he suggested, as an injection, f℥j of tincture of iodine to f℥jss of water, once a day. There was no very sensible diminution in the discharge for several days. Considering the quantity of matter discharged, it was remarkable how well the child sustained itself. Up to the morning of the 13th of April, nothing unusual occurred. On visiting the infant on that morning, I was struck with the change in its appearance; it was evidently in a state of collapse. As soon as I entered the chamber, the mother told me that, about seven o'clock of that morning, she was startled by a peculiar noise, like the escape of air, from the opening in the child's neck. She insisted, as did the nurse, that she could not be mistaken. If her statement were not one of imagination, the case certainly presented a very serious aspect, for it was pretty conclusive evidence that if air did escape, it could only be through a communication with the lungs. The sudden state of *collapse* gave additional weight to the statement. About three or four

hours after the escape of air was heard, the child threw up blood, which, on being examined, was of vermilion color and frothy, and evidently came from the lungs. As soon as I heard these facts, I was anxious to ascertain the true state of the respiration; and on applying my ear to the left lung, both anteriorly and posteriorly, I found no respiratory murmur whatever; and percussion revealed a dull, flat sound at the upper portion of the lung. In the course of an hour, Dr. Mott saw the child with me. It continued to sink, passing occasionally blood from its lungs, and expired on Tuesday, 14th of April, at half-past three o'clock P.M., just thirty-three and a half hours after the mother and nurse supposed they heard the emission of air through the outer opening in the neck.

On Tuesday, 15th April, at eleven o'clock, *post-mortem* examination was made by Dr. Alexander B. Mott, in the presence of Dr. Mott, my son, Dr. Henry M. Bedford, and myself, and the following facts were revealed: The track of the sinus on the left side of the second cervical vertebra passed forward and downward, between the sheath of the carotid artery and longus colli muscle, terminating at the apex of the left lung, where ulceration had taken place. This at once accounted for the unusual phenomena observed before death, viz.: the escape of air through the outer opening, and the passage of blood from the lungs. There was pneumonia of the left lung.

Regular Meeting, May 28, 1856.

Serous Cysts of Kidney.—Dr. A. CLARK presented specimens from a case of *serous cysts of the kidney*, complicated with *apoplexy*. The patient, a female, aged 40 years, a native of Ireland, was admitted into Bellevue Hospital on the 11th of May, 1856. At the time of admission, she appeared stupid, could give no account of herself, and resisted all attempts to undress, so that the nurse thought she was drunk. After being placed in bed, she was restless, occasionally muttering, until about 11 o'clock, when her breathing suddenly became slow and labored. The House Physician was immediately summoned; but when he reached the ward, the attack had passed off, and she was breathing easily at the rate of about twenty a minute, expiration prolonged and sighing; pulse about 100. She resisted attempts at examination, and could not be fully aroused. The pupils are somewhat contracted, but acted well when the candle was approached or withdrawn from them. There was no paralysis of either side, but the right cheek was puffed out at each expiration. At 2½ o'clock she had a convulsive attack, lasting a few minutes; her condition after the attack remained nearly the same as before. At 6 o'clock the nurse reported her the same; her bowels had moved freely at 5½ o'clock,—the stool dark and very offensive. Soon after this, another convulsion occurred. Her condition was not materially changed; at 11 o'clock a third convulsion came on, and immediately after she died. She was not known to have passed urine since her admission to hospital.

Autopsy, 9, A.M., Monday 19; twenty-two hours after death.—On opening the cranium a large clot was found in the arachnoid cavity, on the right side, filling the middle fossa and the space between the cere-

brum and cerebellum, and extending up over the side of the cerebrum to its superior surface. There were signs of recent arachnitis. Several ounces of bloody serum escaped. The liver was of a bronze color, quite small weighing only 2½ lbs. The kidneys were found greatly increased in size and weight, extending from the diaphragm to the iliac fossa. Their surfaces were entirely covered with serous cysts, which were full and prominent when first removed, but now are soft and flabby. The *right kidney* measured: length, 9½; width, 5½; depth, 3 inches. The *left kidney* measured: length, 9½; width, 5; depth, 2¾ inches. The weight of right kidney, 47½; left kidney, 44½ ounces.

Dr. Clark observed that the relation between uræmia and convulsions was frequently seen, and he considered the convulsions in this instance a consequence of uræmia rather than of apoplexy.

One remarkable thing in these cases is the length of time these serous cysts may exist, and no prominent symptoms be present. The disease in these kidneys had doubtless continued a long time, and, if we can credit the statement of her husband, she had never experienced much inconvenience from this cause, until a few days previous to her entrance into the Hospital. The reason of this is probably due to the fact, that these cysts are formed in the substance of the organ, and the secreting portion remains, the kidney structure being broken up between, and forming a part of the walls of the cyst. Dr. Clark referred to his views expressed at a few meetings since, that these cysts will be found not to depend on dilatation of the investment of the malpighian bodies, nor any enlargement of the natural cells of the tubes, or obstruction of the uriniferous ducts, but due to *cells*, deposited in the stroma of the kidney, between and outside of the ducts, etc. (See remarks of Dr. Clark on the origin of serous cysts, in the Proceedings of March 26, 1856, in our July No.)

Removal of Globe of Eye.—Dr. Detmold exhibited the *globe* of an *eye*, removed after the manner practiced by Mr. Crichett, one week since. Some six weeks previous to the operation, the patient, a woman between 20 and 30 years of age, presented herself with symptoms of amaurosis. She was dismissed as a hopeless case. A few days previous to its removal, she again sought his advice. At that time the eye was in a state of general inflammation, the lens opaque, and pressed close against the concave surface of the cornea, at the lower segment of which was a small sclerotic staphylomatous tumor. The diagnosis arrived at was a tumor within the ball of the eye. The inflammation was intense, pain great, and the probable sympathetic inflammation in the sound globe induced him to remove the eye. The vitreous body has disappeared, the pigment dissolved, and when cut into, a dirty brown liquid flowed out, containing a few filaments, which seem to be the remains of the retina. At the point where the optic nerve passes out, two or three small tumors are seen. The operation was performed by an incision around the cornea, about a line from its circumference, then dividing the attachments of the muscles and the optic nerve with a pair of curved scissors. It is just one week since its removal, and the parts have almost healed; and he has never seen more perfect motion, or a case more adapted for an artificial eye.

Rupture of Heart.—Dr. T. C. FINNELL presented a *heart*, obtained from a gentleman 45 years old, a free liver, and of active habits, who died suddenly yesterday morning. On inspection, abundant atheromatous deposit is seen in the aorta, and also two perforations situated just above the aortic valves; one of them complete, opens into the pericardium, which was greatly distended with blood; the other was incomplete.

Dr. MARKOE inquired as to the mode of death; how long he lived?

Dr. Finnell stated that death was instantaneous.

Dr. M. said that this mode of death was peculiar to ruptures at this point—that in a dozen or more instances collected by him a few years since, death invariably occurred extremely suddenly. He supposes the heart emptied, and blood poured out into the pericardium, and death ensues before a second contraction takes place.

Regular Meeting, June 11, 1856.

Dr. ALONZO CLARK reported on the case of tumors of the eye, exhibited at the last meeting of the Society, by Dr. Detmold. The optic nerve itself was not implicated in the disease. The tumor seemed to be composed of two distinct parts, one light and the other dark; in the center of the light portion is a dark spot. A fibrous tunic invests the tumor. Microscopic examination shows it to be entirely composed of that variety of cell, now denied to be cancerous, double-caudate corpuscle of Muller. He could not divest himself of the idea, that these tumors were of a malignant nature; and those holding a contrary opinion admit their not unfrequent reproduction, a marked characteristic of malignancy. In the dark portion, hæmatoidine exists in great abundance; and, in fact, the whole tumor is more or less darkened by its presence.

Large Fibrous Tumor of Uterus.—Dr. CLARK next presented a specimen sent to him by Dr. Burdett, of the Flatbush Hospital. It is a fibrous tumor, on the exterior of the fundus of the uterus, weighing 18 pounds. It is composed of two distinct portions—one part hard, the other soft; the two blending together in such a manner as to render it impossible to determine where the one ends and the other commences. Near the central part of this large tumor, were cysts containing several ounces of serous fluid. Now, what is the nature of the soft portion? Is it cancerous? If so, we have a solution of a point, often the subject of discussion at our meetings, whether fibrous tumors ever assume a malignant character. This softened portion, so far as its general appearance goes, may be encephaloid cancer, or the soft variety of fibrous tumor. But with this tumor was brought the liver, 16 pounds in weight, which contains several masses, large and small, of what will hardly be doubted is encephaloid deposit; and has the same vascularity and general consistence as the softened portion of the uterine tumor, and seems to be of the same character. The microscopic examination was not entirely satisfactory, except as demonstrating the two deposits as identical in nature; if one is cancerous, the other is—both being constituted mainly of fibres and cells, the latter of large size, more or less fatty, more or less rounded; the

nuclei, in most instances, obscured by the brownish opacity produced in them by the alcohol in which the specimen had been macerated,—or otherwise wanting. If so, then here is an instance showing the degeneration of fibrous into malignant growths. Nothing of importance occurred in the progress of the disease. It was removed from a colored woman, 40 years of age, who first became aware of the existence of the uterine tumor about seven years since. The softened portion, being about one-fifth of the whole mass, appeared mainly as one large mass; but there were numerous softened spots, in the substance of the tumor, of small size.

Perforation of Appendix Vermiformis.—Dr. McCready presented a specimen of ulceration and perforation of the appendix vermiformis, from hardened fæces. On Wednesday, June 4, he was called to visit a slight, somewhat delicate boy in appearance, though habitually enjoying good health. Two days previous, immediately after dinner, he had eaten a large piece of cocoa-nut. From that time he had suffered colicky pains in the bowels. He had vomited slightly, and a dose of castor-oil had been administered, which had acted freely. He was found with a cool skin, and a tranquil expression of countenance; the tongue clean, the pulse about 100, and without tension. The pain complained of was aggravated at intervals, and was located in the epigastric and right hypochondriac regions. He complained of tenderness on pressure; but when it was made gradually, he bore it well. A dose of calomel and Dover's powder was ordered, to be followed in the morning by a mixture of rhubarb and soda. The medicine operated freely, but without affording relief. Morphine in full doses was now prescribed, and the pain was for a time alleviated, and the pulse reduced in frequency. The pain, however, returned, and the pulse rose to 116. The abdomen was slightly swollen, and the tenderness referred to, in the same region as before, was somewhat increased. He complained that it hurt him to rise or to turn in bed. This, however, was not constant; since he, on different occasions, turned and raised himself to a sitting posture, at my request, without complaint. The decubitus was natural, generally on the side; legs were not drawn up; the countenance was natural and the skin soft. He was put on the use of calomel and opium: two grains of the former, with a half-grain of the latter, being ordered every three hours. The opium, as is frequently the case, diminished the secretion of urine and also produced slight retention, the patient passing it but once in twenty-four hours.

On the morning of Sunday, June 8, Dr. Gurdon Buck saw the child, in consultation. The symptoms had not materially altered; the pulse ranged from 116 to 120, and was soft, and of moderate fullness; the tongue clean; the skin, countenance, and decubitus natural. As the bowels had not been moved for nearly three days, a large enema, with a spoonful of castor oil, was ordered; and warm fomentations to the abdomen, which had previously been applied, were continued. On visiting the patient at 1 P.M., his countenance was sunken, and pulse very frequent, and scarcely perceptible. The skin was bathed in perspiration, and there was some coldness of the extremities. The pain

was gone, and the little patient moved freely in all directions. Soon after the administration of the enema, he had a large watery evacuation, and had passed urine freely. This was followed by vomiting of a quantity of dark, green-looking fluid. During the afternoon and evening, the vomiting recurred several times; and acute pain in the abdomen was complained of. The child became exceedingly restless, tossing about in bed; the extremities colder, the countenance more livid and sunken, and finally expired at about three o'clock on the morning of the 10th.

Post mortem examination fourteen hours after Death. Abdomen.—On opening the abdomen, it was found filled with a considerable quantity of sero-purulent fluid. The intestines were universally glued together by soft adhesions, which were readily broken up. In several places where two folds would be adherent, there would be at the place of adhesion, a dark brown, circumscribed patch, with a well-defined margin, resembling so closely the appearance of gangrene after strangulated hernia, as to be at first taken for gangrene by Dr. Buck. The intensity of the inflammation was evidently greatest about the hypogastric region; and raising the intestines from the pelvis, the effused fluid was found there of a darker color, having a brownish tinge. There was, however, no feculent odor. Amid the mass of large intestine which dipped down into the pelvis, the appendix vermiformis was found, intensely inflamed, much enlarged, and having a flattened appearance. It contained a concretion about the size of a swollen white bean. No perforation was noticeable. On being laid open, the mucous membrane of the appendix was intensely inflamed, the inflammation extending to the neighboring large intestine, the follicles of which were enlarged and prominent. The concretion consisted apparently of a small feculent mass which had formed itself around two or three minute whitish bodies about the size of strawberry seeds. The appendix, with the caput coli, was removed, and, after maceration one hour in water, several minute ulcerations were evident; one of which about the size of a pin's head, had perforated into the abdominal cavity. The other organs were not examined.

Rupture of Intestine.—Dr. FINNELL presented an instance of rupture of the small intestine, from violence. The patient from whom this was obtained, was 30 years old, a stout, healthy man, who was violently beaten about the head, and kicked in the abdomen. He instantly complained of severe pain in the bowels, sickness at stomach, and great prostration of strength. In a few minutes he recovered sufficiently to walk home, a distance of several blocks. The pain still continuing, a physician was called, who attended him up to the time of his death, which took place thirteen hours after the injury.

The autopsy revealed extensive peritonitis; and a circular perforation about the size of a five-cent piece was found in the ileum, about three feet from the cœcum. The contents of the intestine passing into the peritoneal cavity, produced inflammation and death.

PART SECOND.

CRITICAL ANALYSIS.

ART. XII.—*Human Physiology, Statical and Dynamical; or, The Conditions and Course of the Life of Man.* By JOHN WILLIAM DRAPER, M.D., LL.D., Professor of Chemistry and Physiology in the University of New York. Illustrated with nearly three hundred wood engravings. 8vo., pp. 649. New York: Harper & Bros., 1856.

THE professional public have been awaiting, with no little impatience, the publication of Professor Draper's work on physiology. The book is now before them, and its merits are to be decided by the honest judgment of those for whose special benefit it was more particularly written. He who undertakes to review a book owes it, in the first place, as a matter of ordinary justice both to himself and his author, that he should have perused the work with careful consideration; and, secondly, that his impressions should be given free from all bias or preconceived opinion. The writer of this article has endeavored to comply with these requisites; he has read every page of the interesting volume, and will now endeavor, as far as his judgment will enable him to do so, to place on paper his estimate of the manner in which Prof. Draper has accomplished the laborious and difficult task of giving us a work on that most intricate, and yet most fascinating and essential department of science—human physiology.

We think the author has not done himself justice in the preface of his work; the following is his language: "He trusts he will not be misunderstood, and that his pupils and readers will constantly bear in mind that, beyond the suggestion of a trifling fact or idea here and there, the matter presented is not original with him, but derived from other sources—the author's reading, during many years, of the chief works on physiology and its kindred subjects." (Preface, p. 4.)

Hence, it might be supposed that his book is merely a compilation; such, however, is not the case, for a very cursory examination will readily show that scarcely half a dozen pages can be found in which some new view or fact is not presented. Before commencing with details, we may, for a moment, direct attention to the more imposing features of the book. It may, indeed, be said that it literally aims at remodelling and recasting the entire science of physiology. Regarded from a high philosophical point of view, man, like any other animal, presents himself to our contemplation under two aspects. We must, in the first place, consider him as maintaining himself for the time in an unchanged state or condition of equilibrium, and examine how this is

accomplished through the various functions of his mechanism. This at once leads us to the discussion of digestion, absorption, the circulation, respiration, etc. Secondly, we must also consider him as pursuing a career in which, from a simple cell, he passes through a thousand phases of form to a perfectly organized being.

Now, although this is plain enough, and perfectly in accordance with the long established methods of natural philosophy, strange to say it has never been pursued by authors on physiological science; nor until the appearance of Dr. Draper's book have we ever seen this, which is the true and philosophical method, attempted at all, still less, carried out with clearness and precision. Henceforth, physiologists must accept this division of their science, and treat of it distinctly under its statical and dynamical branches.

In like manner, we must accept the imposing conception, first offered in this work, of standard types of men, and set ourselves at determining what it calls the constants of physiology. How much food, water, air, etc., a man of determinate weight requires in a given time; what is the diurnal waste of nervous and muscular matter; how much heat he produces, and the mechanical value of his muscular force for a like period, etc.; and these, not alone for the adult, but for all other ages, and also in the case of different nations.

It is with such general views of the nature of his department that our author opens his work, evidently regarding the subject matter as a branch of physical science. It is true, that this mode of discussing physiological questions, though we may say there has been a growing tendency towards it of late years, has never been carried out so completely as in the present volume, and, in this particular, it represents the doctrines of a very vigorous and progressive school of physiologists—doctrines which, if not true, have at least the merit of no little plausibility.

Among the special novelties to which we have made allusion, we may point out the views here presented respecting the manner in which the function of absorption is accomplished; the distinction between what goes on in the stomach and in the villous portion of the intestine, and the happy illustration given of the so-called selecting power of the lacteal vessels; the mechanical causes, which give rise to the flow of the chyle in its passage from the villi to the blood-system; the application of principles known as those of capillary attraction, and the manner in which, through minute pores, absolutely imperceptible to the eye, nutritive material is introduced. The demonstration that through vessels, less than the half of a millionth of an inch, watery juices will readily pass is very satisfactory, as is also the illustration of the prodigious force with which such movements are accomplished—a force able to overcome resistances of fifty or a hundred atmospheres.

The views of our author respecting the circulation of the blood have been heretofore published, and are favorably known to most English readers through such works as Carpenter's Physiology, and Todd and Bowman's Physiological Anatomy. He differs in opinion with Harvey, who traced the circulation to causes purely

mechanical in the strictest acceptation of that term; and has clearly pointed out, we think, that the arterialization of the blood in the lungs is the true cause of the circulatory movement in man.

"I consider the circulation as the consequence of respiration; and though, in one sense, the minor causes are numerous, each portion of nervous material, each muscular fibre, every secreting cell working its own way; these subordinate actions are all referable to one primordial act, and that is the exposure of the blood to the air." (p. 133.)

Again, our author says:—

"Among the striking proofs of the truth of this doctrine, that the primary cause of the circulation is the æration of the blood, I would particularly direct attention to the effects which ensue in the moment of birth at the first breath. That intercommunication between the two sides of the heart, established through the foramen ovale and through the ductus arteriosus, is suddenly put an end to. But this is not through any change in the mechanism of the heart itself, nor because of any interruption in the action of the placenta; it is solely because of the calling into operation of the principle we have been enforcing. Through the contact of the cold air, or other causes which might be assigned, the inspiratory muscles make their first contraction and distend the lungs; at that instant, the commencing arterialization produces a pressure in the manner I have explained, of the venous upon the now arterialized blood in the vessels of the pulmonary cells. There is no other possible issue to such an action than an instant drain upon the heart. The pulmonary or less circulation sets in with full vigor. The blood is not driven by the heart to the lungs, but drained by the lungs from the heart. If it were the heart's action that occasion this sudden increase of force, because of the strain thrown upon it through the shutting off of the influence of the placenta, it is inconceivable why the current should not continue to move through the great avenues already open to it from the right to the left auricle through the foramen ovale, and from the right ventricle into the aorta through the ductus arteriosus. The arrest of its motion through these channels distinctly establishes that the seat of the new action is in the lungs, and the final closure of the foramen and shriveling of the duct confirm the correctness of this conclusion." (p. 148.)

The following quotation, from our author, on this same subject, will show how completely he agrees with his distinguished co-laborer, Liebig, in reference to the true cause of movement, which, it will be seen, is claimed to be essentially chemical in all its relations:—

"The scarlet or arterial blood, charged with its oxygen, passes to all parts of the economy in search of organic particles ready to be removed; it effects their disorganization, and, becoming thereby venous, is pressed onward. And now, if we recall that nutrition in animals depends on the access of air—even fibrin cannot arise from albumen, except under that condition—we cannot avoid the conclusion that all operations of repair and all operations of waste are made to conspire together for the production of movement; and though every part offers its own special cause, as depending on nutrition, or disintegration, or secretion, they may be all grouped together as the neces

sary results of one more primitive operation, which is the supply of oxygen to the blood in the respiratory movement." (p. 133.)

In Liebig's Animal Chemistry will be found the following language: "The change of matter, the manifestation of mechanical force, and the absorption of oxygen are, in the animal body, so closely connected with each other, that we may consider the amount of motion and the quantity of living tissue transformed proportional to the quantity of oxygen inspired and consumed in a given time by the animal. If we employ these well-known facts as means to assist us in investigating the ultimate of the mechanical effects in the animal organism, observation teaches us, that the motion of the blood and of the other animal fluids, proceeds from distinct organs, which, as in the case of the heart and intestines, do not generate the moving power in themselves, but receive it from other quarters."

In the chapter on respiration, there is much to interest us; and some of the views advanced by our author are marked by striking originality. As the result of his own experiments, he shews that the respiratory movement is divided into several stages or steps, in the first of which, as is usually admitted, the pressure of the air, as called into action by the contractions of the diaphragm, is to be relied on; in the second, the diffusion of gases from the larger ramifications of the bronchial tubes and the remotest air cells, aided by the contractions of the circular organic fibres of these structures, the special experiments in proof of this having been published by the author three or four years ago in the *American Journal of Medical Sciences;* and, in the third place, the condensing action of the membranes constituting the walls of the air-cells, and the walls of the pulmonary blood-vessels is requisite to drive the fresh air into the blood, and remove from the blood the products of expiration; this latter interesting fact being now, for the first time, established. In the same chapter, there will also be found some original remarks respecting the coalescence of the action of the kidneys and of the lungs in the case of the breathing of fishes, when accomplished by the gills. These observations will, we have no doubt, attract the attention of those who are studying the organic functions of fœtal life; for it is very evident that what our author here states touching gill-respiration applies also to placental respiration.

"But in aquatic animals, as in fishes generally, there is not this restriction or concentration of function, for the gill, being in contact with water, offers a channel for the passing away of many products of waste which from their non-ærial state, could never escape through a lung, and so I regard this organ, the gill, as in a measure sharing the duty of a kidney in eliminating nitrogenized and, perhaps, saline matters. Comparative anatomists have long recognized that the so-called kidney in fishes approaches in character the Wolffian bodies, largely developed in the fœtal condition of man. I am disposed to believe that the physical interpretation of this depends in the fact now before us, and that the gill in fishes, and the placenta, in part, in mammals, discharge at once the double office of a respiratory and urinary organ. It is consistent with the science of organic design, that there should be

this separation and concentration of function as development takes place." (p. 150.)

In his discussion of animal heat, we find presented some interesting views on that important question. Hitherto, the doctrine held by many has been, that the animal mechanism could, by reason of its own provisions, *resist* all external variations of temperature, and that in this way a man maintains himself at the same degree of heat winter and summer, day and night, and under all circumstances. Our author, on the contrary, asserts that it is with man as with any inorganic mass, he possesses no such intrinsic powers of resistance, but blindly follows external temperatures, according as they may be; and that the true source of compensation is to be found in the resort to food, clothing, and shelter; that it is because of the imperfect manner in which this threefold provision is employed, that many of those periodical phenomena, which the system displays are to be attributed, and which heretofore have been supposed to be due, to its nervous structure. And he further maintains that these periodicities are nothing more than the residual or uncompensated action of outward impressions arising from the influences of night and day, and the various seasons.

"In every instance we assert that the production of animal heat is due to oxidation taking place in the economy, and giving rise to carbonic acid, water, and other collateral products. * * * * * * Reduced to its ultimate conditions, the evolution of animal heat depends on the reaction taking place between the air introduced by respiration and the food, and as either one or the other of these may be touched, the other may be predicted." (p. 182.)

It will been seen from the above extract, that there is a concurrence of opinion on this much controverted subject, between our author and his fellow-laborer, Liebig, who says in his animal chemistry, "There is not the smallest support to the opinion, that there exists in the animal body, any other unknown source of heat, besides the mutual chemical action between the elements of the food and the oxygen of the air."

Passing rapidly forward, we may next direct attention to doctrines held by our author, and here attempted to be established, touching the important function of secretion. If we do not misapprehend what he says—and we think we do not—he would have us believe that *secretion* is nothing more than a strainage, mechanically speaking—a doctrine, which plainly involves the admission, that all secreted matter preëxists in the blood. This we consider the weakest part of the work. Take for example, the case of the mammary gland. How is it to be credited, that the enormous quantity of caseine, which is known to be a leading constituent of milk, is at the moment preëxisting in the blood? This is what we should be required to admit on our author's principle, and though he argues that the appearance of kiesteine in the urine, under this condition of the system, is an illustrative proof that a caseum is occurring in the blood, it must not be forgotten that there still remains much uncertainty as to the nature of the so-called kiesteine, and that numerous eminent authorities deny that it is analagous in any respect to the caseine group of bodies. Urea is another abund-

ant and familiar product, which many chemists have acknowledged their inability to detect in the blood of the healthy subject. The question is still one of debate; and, even if it be conceded that minute quantities have been obtained by some experimenters from normal blood, it cannot explain the abundance of this product as eliminated by the kidneys, and may it not be liable, also, to the objection of being an artificial formation consequent upon the chemical reaction. It is well known, that urea may be produced in the laboratory of the chemist, by the decomposition of nitrogenous compound. (LEHMAN'S *Physiological Chemistry*, vol. 1, pp. 150, 156.) Nor do we ascribe much importance to the arguments attempted to be derived by our author, from what he terms vicarious secretion. This latter, it seems to us, is surrounded by too many solid objections to be arrayed in opposition to the multitude of facts, which establish the dependence of the various secreted products upon special forms of organization, endowed with properties capable of effecting, through that organization, new formations out of the blood. We must not be content to regard the secretions merely in their natural condition; but should comprehend in the question the numerous varieties incident upon disease. Here, then, we find them fluctuating in the most extraordinary manner, because of the action, either locally or upon the system at large, of an endless variety of physical agents, and also because of the influence of mental emotions, and of the particular nature of these emotions.

But let us hear our author respecting the liver:—

"From the point which we have now reached through this description, we are able to see the double duty which this great gland discharges, and must correct, to a certain extent, the popular theory of its action. Does the liver really secrete bile? Is it the business of the so-called bile-secreting cells to withdraw the constituents of that liquid from the blood, and combine them together into this viscid yellow liquid? I think not; for it is a matter of demonstration that noting every constituent of the bile, but the bile itself, preëxists in the blood, and it is just as unphilosophical to burden those cells with the duty of forming it as it would be to believe that a like agency is needful for the appearance of urea in the kidney. * * * * * For these reasons, I believe that the bile simply transudes from the blood, and that the cells of the lobules have no special relation to it beyond this, that it oozes past their interstices, or, perhaps, by physical inhalation, finds access to their interin." (p. 200.)

"Our conclusion respecting the mode of action of secreting cells turns altogether upon the evidence of the power they possess of preparing material, which did not preëxist in the blood. Thus, if it should be shown that, under normal circumstances, the elements of bile are not found in the blood, the inference might be drawn that the hepatic cells display a combining, or, as it were, a preparing power; and so likewise in the case of other secreting cells; but the weight to be attached to such evidence, is greatly affected by the consideration that the action of each gland or secreting apparatus marks what is really going on in the system. It is possible that we may be scarcely able to discover the traces of substances in the blood, and yet a tendency may

exist for their accumulation to a great extent. Thus there can be no doubt that urea would abound through the disintegration of the muscular structures, and the use of nitrogenized food, if it were not for the action of the kidneys. It is the very perfection of that action which so diminishes the amount in the circulation as to prevent us, except with difficulty, from detecting the presence of the ingredient." (p. 192.)

It does seem to us that the above extract is not in accordance with that lucid and philosophical method of thought and reasoning so characteristic of our author. Indeed, the last sentence alone furnishes, physiologically speaking, a conclusive and perfectly irresistible argument against Dr. Draper's theory of secretion through strainage, if we comprehend the meaning of his language. *It is the very perfection of that action* (of the kidneys) *which so diminishes the amount* (of urea) *in the circulation as to prevent us, except with difficulty, from detecting the presence of the ingredient.* This is an ample admission, and the most uncompromising opponent of our author's doctrine of secretion could ask nothing more. Let us now see why it is, in many of the disturbed conditions of kidney secretion, and also in cases of retention of urine, that most distressing, and oftentimes fatal, constitutional symptoms develop themselves. Why, for example, is it that in either suppression or retention of urine, there is a species of toxæmia, or blood poisoning, which, if not promptly met, will result in death to the patient? The answer is, that the perfection of that action of the kidneys, so necessary for the secretion of the poison urea, does not exist; and hence, in these cases, this substance is thrown into the blood, and produces its mischievous consequences on the nervous system. It is in cases like these that the chemist is able to detect, in more or less quantity, urea in the blood, precisely as he can trace bile in that fluid, in certain forms of hepatic derangement. There is, in our judgment, a strong argument against our author's assumptions as to the pre-existence of secreted matter in the blood, in the following language of Lehman:

"In the attempt to form a conclusion regarding the metamorphosis of the blood from an elementary analysis of its solid residue, and of the composition of the individual constituents of the excretions, there is *an utter absence of scientific groundwork;* for, independently of the fact that the elementary analysis of so compound a matter as the blood is *incapable of yielding any reliable result*, and cannot, therefore, justify the adoption of any special chemical formula, it is most illogical to attempt *to compare the composition of the blood, collectively, with that of the separate excrementitious matters.*"—[Lehman's *Physiological Chemistry*, Vol. 1, p. 23.]

We would gladly discuss this interesting question of secretion in further detail, but space will not permit; and we, therefore, in courteous objection to our author, believe that *from the constancy of aspect which glands present, their peculiarities of construction determine their physiological action—that the liver secretes bile, and the kidney urine, because they have the special organization, which is needful for such purposes.*

In speaking of another action of the liver, our author says: "With

respect to the production of sugar in the liver, it may be remarked, that the quantity of that substance in the solid residue of the serum of hepatic blood is from ten to sixteen times greater than in the same residue from the portal blood; and in animals undergoing starvation, though no sugar could be found in portal blood, it occurred to such an extent in the corresponding hepatic venous blood, that Lehman found its quantity could be determined by fermentation. From this there can be no doubt that, in the changes which are occurring during the passage of the blood through the liver, there is a production of sugar, and this seems to be connected with a diminution in the quantity of fat; for if an excess of fat, and deficiency of sugar enter that organ, and their quantities are inversely changed at their emergence from it, it would appear that fat may be decomposed actually, as we know is possible hypothetically, into cholic acid and sugar." (p. 208.)

Until quite recently, the idea prevailed that the vegetable kingdom alone was capable of producing sugar, and hence, whenever this substance was detected in man or animals, it was at once referred to a vegetable origin, the opinion being that it was due to vegetable food. It was contended that the quantity of sugar found in an animal varied according to the nature of its nourishment; and that this substance was recognized only in herbivorous animals, which consumed abundantly feculent matter, easily transformable into sugar. It has remained for Bernard * to demonstrate—which he has done most successfully—that sugar is not an accidental element in the organism, but that it is constantly met with in the economy, and that its production is the result of a special function, in no way dependent upon the quality of the food. This function it is the office of the liver to discharge—and Bernard has termed it the *glycogenic* function. The formation of sugar, therefore, in the liver is no longer a question of controversy—it is a physiological truth perfectly established, and must be so accepted. The notion that sugar is produced at the expense of the fatty matter, seems to be entirely set aside by Bernard's experiments, for he has shown that a purely adipose nourishment not only diminishes the production of this substance in the liver, but also lessens its quantity in the system.

In that part of the work which treats of the functions of the nervous mechanism, our author presents a view of the nature and uses of nerve vesicles, which we have no doubt will elicit the attention not only of physicians, but also of those who cultivate what may be termed physico-metaphysical science. In a two-fold way, partly from their structure, and partly from the phenomena displayed by electrical currents upon them, our author endeavors to prove that the true use of nerve vesicles is that they afford an opening into new channels of the nervous influence, which passes along nerve tubules or tubes; so that this influence may escape from the particular path which it is pursuing into new routes, and that while this is accomplished, a portion of the influence is detained in the vesicle, which thus becomes a receptable or register of power. A ganglion is composed of such

* Leçon's de Physiologie Expérimentales.

vesicles, and whatever applies to them individually applies in the aggregate to this ganglion so constructed. If we look at the consequences of such a doctrine as this, it would seem that few opinions have of late years been advanced touching the action of the nervous mechanism more worthy of profound consideration.

We have not time to pursue a detailed examination of what is said respecting the special organs of sense as connected with the nervous mechanism, and shall, therefore, content ourselves with a selection from the chapter on vision and hearing. As regards the former, our author restores the doctrine which was current a century ago, viz., that the black pigment is the seat of this function, and explains, as the necessary consequence of the admission of this fact, the difficulties of inverted vision, the use of the choroid coat, and foramen Sœmmeri—structures, the objects of which are without comprehension on the ordinarily received doctrine that the retina is the seat of vision. In discussing the subject of hearing, he maintains that the cochlea, the tympanum, and the semicircular canals, have totally distinct functions—the cochlea being for the estimation of the pitch or note of sounds, the tympanum for the loudness, and the semicircular canals for that particularly known in acoustics as the quality of sounds. As respects the manner in which interference is accomplished in the ear, similar views to those here put forth have been simultaneously taught by Dr. Jackson, of Philadelphia.

Before closing this review, we must, for the instant, call attention to the doctrine of our author, that muscular contraction, in all instances, is due to the destruction of muscular tissue—the latter being the cause, the former the effect. By calculations, founded on the size and weight of muscle fibres, and on the quantity of disintegrated matter, which appears in the various excretions, the origin of which must be due to muscle decay, it is sought to establish the fact, which might seem at first sight to be wanting in probability, that though the action of arterial blood upon the syntonin of muscle fibres producing its destruction, and through the rapid restoration of these fibres to their normal state by the aid of fibrin or syntonin, derived from the same source, arterial blood, there are no phenomena of muscular contraction, which may not upon these principles be easily explained. This is a novel and most interesting view of a question, which has been the subject of more than one hypothesis.

But we must conclude, and, in doing so, we beg leave to return our thanks to the learned author of this work for the rich contribution he has made to physiological science; he has, we think, given a new direction to thought, and the effect of such a work as this, on true professional progress, will be incalculable. The book is in every way worthy of its author, and will shed lustre on American medical science. This is emphatically an age of progress; medical men are given to close and searching inquiry, and the dawn of the future is the beacon of promise that our profession will still advance in solid accessions to her already vast domain. We believe in the maxim of Zimmerman:—

"Le médecin le plus occupé est un médecin dangereux, s'il ne lit pas.

G. S. B.

BIBLIOGRAPHICAL NOTICES.

ART. XIII.—*Clinical Lectures on the Diseases of Women and Children.* By GUNNING S. BEDFORD, A.M., M.D., Prof. of Obstetrics, etc., in the University of New York. Fourth edition, carefully revised and enlarged. New York, S. S. & W. Wood, 1856.

THE rapidity with which the treatise has passed through its several editions, has scarcely been excelled by the popular literary works of the day. Within a little more than a year three editions have been exhausted, and a fourth is now issued to meet the demand. This result of their labors must be equally gratifying to author and publishers.

ART. XIV.—*New Remedies, with Formulæ for their Preparation and Administration.* By ROBLEY DUNGLISON, M.D., Prof. in Jeff. Med. Coll. Seventh edition, with additions. Philadelphia: Blanchard and Lea, 1856.

THE science of Therapeutics is so rapidly progressive that it requires not a little activity on the part of the pharmaceutist to keep pace with its improvements. New principles of treatment are discovered, and require the adaptation of remedies.

The new edition of this popular work we are glad to see contains important additions, which embrace full details of all the recently employed remedies. The volume is otherwise too well known and appreciated to require further notice at our hands.

ART. XV.—*The Principles of Surgery.* By JAMES MILLER, F.R.C.S.E., Prof. of Surgery in the University of Edinburgh, R.R. Fourth American, from the third and revised London edition, illustrated by two hundred and forty engravings on wood. Philadelphia, Blanchard & Lea, 1856.

WE have always regarded this work as the best of the kind yet published, and have, with the issue of former editions, cordially recommended it to the profession. It still remains unrivaled as the clearest, and most comprehensive treatise on the principles of Surgery in the literature of the profession.

ART. XVI.—*Medical Jurisprudence.* By ALFRED S. TAYLOR, M.D., F.R.S. Fourth American from the fifth and improved London edition, with additions. By EDWARD HARTSHORNE, M.D., Philadelphia: Blanchard & Lea, 1856.

WE were so recently called upon to notice a previous edition of this valuable work, that we shall merely announce the present enlarged and revised edition.

PART THIRD.

RETROSPECT AND EDITORIAL.

Report on the Chemical Composition of Hair Dyes. By Prof. GEORGE HADLEY, M.D., of Buffalo University.—In the Buffalo *Medical Journal* for August we find an abstract of a report on the subject of Hair Dyes. The report was made to the Buffalo Medical Association:—

Prof. Hadley stated that he had been unable to find any treatises upon the subject which afforded him any assistance, and he was, therefore, obliged to speak from his own knowledge of the chemical constitution of nearly all the various articles in use: either as dyes, depilatories, or for improving its growth and appearance. To this he should principally confine himself.

The history of the use both of hair dyes, and of preparations for beautifying the hair, extends to the remotest antiquity, and no people, however degraded or however elevated in the scale of civilization, has ever existed, among whom we may not find their use to be prevalent.

At the present time, as probably in all others, the object sought by a hair dye is the production of a color darker than the one worn. We never hear of any article being used for decolorizing the hair, or substituting an auburn or light-brown for any darker hue.

All the various hair dyes in use are made from the different salts of two metals, viz.: lead and silver. Other substances *may* be used, but they are either too expensive or too injurious to the hair itself.

1. *Lead.* Several salts of lead are used; but the most common lead dye is that made from litharge and lime. Equal parts of lime and litharge are rubbed into a paste, with sufficient water to furnish the proper consistence. This paste is then very freely applied to the hair, being well rubbed into it, and thickly laid on. It is kept moist by oil or India-rubber cloth, and allowed to remain for from three to eight hours—is usually put on at night and kept on during sleep. The color which results is unexceptionable, being a fine dark black.

It will be noticed that this dye is applied to the skin, but does not color it. Prof. H. stated that he had applied it to his arm for a period of six hours. The hairs beneath were died, but the skin remained colorless. This is the more curious, from the fact that, physiologically, the hair and the epidermis are the same in their elementary construction. There is, however, but little doubt that the coloring properties of lead depend on the deposition of a sulphuret in the hair. Most proteine substances emit sulphuretted hydrogen on the action of caustic alkalis. In the process of "hulling corn," by placing it in ley, the grain is

backened by the alkali. The process of this hair dye, then, is as follows:—The litharge is in part dissolved by the caustic lime, and the lead, thus rendered soluble, penetrates the hair, and is deposited as a sulphuret of lead. It is remarkable that in the use of this dye the *dandruff* is colored.

The formula of lead dyes vary. Sometimes white lead is used; sometimes whiting or flour are added to prevent the too caustic action of the lime. Some formulæ, like the prescriptions of the older physicians, contain a dozen or more ingredients, only a few of which are essential.

Prof. Hadley stated that he had heard no complaints of the effect of this dye on the skin. The hair, however, is rendered brittle by its use, and must be oiled to prevent it breaking. In spite of any precaution the ends will crack off, and its use often abandoned for this reason, though the color produced is unexceptionable.

"Twigg's Hair Dye" is simply a weak solution of acetate of lead to which precipitated sulphur is added. It is put up by almost every druggist, and sold under many different names. The continued use of it does, in many instances, cause the hair to grow darker, though Prof. H. had never seen a black color produced by it. It also checks the formation of dandruff. In its effects it corrugates the skin, which becomes harsh, and the person using it assumes a peculiar, old, wrinkled look. This, however, soon passes off. The directions, unlike other dyes, insist on its being well rubbed in.

Silver Dyes.—These are much more used than the lead. The effects of light on the salts of silver are well known. The chloride of silver when exposed to light in a moist state, turns black; and the photographic process is entirely similar, except that the effect of the light upon the iodide or bromide of silver is not visible until subjected to reagents. In a similar manner these dyes are put up; some of them consisting simply of a single bottle of a solution of a salt of silver when the action of light is alone relied on as the reagent. ("dyes without preparation"); or in other cases a reagent accompanies the package ("dyes with preparation").

Nitrate of silver is the salt used in the manufacture of all these dyes, but it does not exist as a nitrate in the dye. *Pure* nitrate of silver is not affected by light; it may be exposed on a window for years, if tightly corked, without change. The change of color is uniformly due to the presence of organic matter, as when paper is wrapped around the sticks, or where the crystals come in contact with the cork of the bottle.

In dyeing the hair, many use the "dye without preparation," and expose to light. This is a slow process, and the hair should be thoroughly cleansed by soap and soda before its application. In experimenting in the laboratory, Prof. H. found that by boiling the hair in caustic soda he was able to produce a deep permanent black with a dye of only one-eight the ordinary strength. No dyes now sold contain simple nitrate of silver; all are more or less mixed.

In the use of dyes with preparation, a mordant accompanies the dye. In twenty or thirty different dyes which Prof. Hadley had analyzed, this preparation consisted uniformly of a weak solution of

gallic acid, in the proportion of one grain of the acid to one hundred grains of water This reduces the salt to an oxyde, instantaneously, constituting a large saving in time, while the tint is better than in the dyes without preparation. These latter leave the hair with a reddish tinge, particularly in reflected light, unless the dye be very strong, or twice used.

In some dyes three bottles are put up, one of which is only to be used on the failure of the other two. This third bottle always contains a little sulphuret of sodium, potassium, or ammonia. In two hair dyes manufactured in Philadelphia, no solution of gallic acid is put up, but instead of it the second bottle contains sulphuret of potassium or sodium. The objections to this plan are serious. The odor of sulphuretted hydrogen is offensive, it is very caustic, and acts on the skin, so that, if not used with care, the hair may be scraped off easily with the back of a knife, or pulled out by handsfull.

The nitrate of silver acts upon the hair as upon other organic tissues. It kills it, producing a firm dry, hard eschar, which, in the case of an ulcer, protects the parts beneath. All of these hair dyes are warranted not to stain the skin; but all of them will stain it if they come in contact.

The per centage of silver in the dyes sold varies very much. Prof. H. had analyzed nearly all the dyes sold, and found the per centage to vary from four to eighteen per cent. of metallic of silver. The following will illustrate :—One hundred parts of dye contain

In Ballard's Hair Dye,----------	6	per	cent.	of silver.
" Batchelor's (Utica prep.)-------	16	"	"	"
" (New York prep.)---	18	"	"	"
" Phalon's,----------	18	"	"	"
" Christadoro's,----------	15	"	"	"
" Mathews,----------	5	"	"	"

(Many others were given.)

This per centage, however, furnishes no index to the actual value or cost of the dye, inasmuch as the size of the bottles varies, and also the price. Thus each bottle of the various dyes contains of solid silver :—

Ballard's Dye,----------	silver	to	the	value	of 10 cents.
Phalon's,----------	"	"	"	10	"
Batchelor's (Utica prep.)-	"	"	"	8	"
" (N. Y. prep.)--	"	"	"	8	"
Christadoro's,----------	"	"	"	8	"
Clirehugh's,----------	"	"	"	8	"

Prof. Hadley continued his remarks, taking up briefly the subject of preparations for beautifying the hair. These promise everything: to cure baldness, prevent dandruff and falling of the hair, etc., etc. Oils and fats are mostly used in them. The great difficulty in the use of free oils is their liability to become rancid. A few years ago nearly all the liquid hair oils were made from lard oil, colored. The usual color was red, produced by alkanet, the red color of which is soluble in oils.

More recently castor oil is almost exclusively used. When pure it

is too thick for convenient use, and is, therefore, mixed with strong alcohol, as follows:—

℞ Castor oil, ℥x.
Alcohol, ℥ji.
Essential oils, ʒji.

These latter are used as perfumes.

The various Tricopheri, the Renovators, and Kathairons, are pretty nearly alike. All contain alcohol in large proportion, and all have tincture of cantharides as a stimulant. Various perfumes are used to convey a distinctive character. The following formula is a good one, and a fair sample of these articles:—

℞ Castor oil, ℥vj.
Alcohol, ℥xxvj.
Tr. cantharides, ℥j.
Essential oils, ℥jss.

EDITORIAL.

The Inauguration of the newly erected Pathological Building, associated with the Bellevue Hospital and Alms House, New York.

Saturday the 25th of October, 1856, is likely to be long remembered by the friends of medical and surgical science. The new and commodious edifice recently finished by our able Board of Governors, for the accommodation of the various purposes connected with the Alms House and Bellevue Hospital, was opened on that day to a large assembly of the students of medical, surgical, and obstetrical science, and the judicious arrangements of that portion of the building designed for public instruction presented in its crowded auditory a sight most gratifying to the enlightened Board of Governors, and the Faculty of Instruction. The disciples of the several schools of Medicine in New York, those of the College of Physicians and Surgeons—of the New York University—and of the Thirteenth Street Medical College, formed a body of some three hundred and upwards, who occupied the seats of the theatre arranged for anatomical and pathological instruction. The several physicians and surgeons of the Alms House and Bellevue Hospital were in attendance as well as the prominent members of the several Colleges.

The special business of the day was announced by an address to the large audience by John W. Francis, M.D., LL.D., the President of the Medical Board. He gave a concise history of the first introduction of clinical instruction in Great Britain, and of the practical labors of the late eminent Dr. Saunders, of London, to whom was awarded the claims of having been the original projector of clinical lectures at Guy's Hospital, now nearly a century ago. The vast advantage of that species of instruction was dwelt upon by the venerable speaker, who related some interesting incidents on the subject, a knowledge of which he had derived from the lips of Dr. Saunders himself in his interviews with him at his retreat at Enfield, some forty years since.

With a letter of introduction, said Dr. Francis, furnished me by Dr. Samuel Bard, the second President of the College of Physicians and Surgeons, and who had been a fellow-pupil with Saunders at Edin-

burgh, I approached him with due reverence. He was now at least midway between seventy and eighty years old. He surpassed the ordinary size, and, I think, might have had the bulk of some two hundred pounds and more. His countenance was of a sweet and benignant aspect, with almost the freshness of youth; his features regular and well proportioned; his front full and elevated; his nose was well proportioned, and his gray eyes, arched with thick brows, bespoke intelligence. I saw no hirsute developments about him, save his ample locks of driven snow, and his formidable queu, of at least one inch in diameter, and extending down his back to the verge of the sacral region. It needed but little elongation to make a respectable walking cane. His hand had the delicacy of a lady's. He wore a full-dressed black coat, with large side pockets, a yellow vest, black silk breeches, and broad silver shoe buckles. His whole bearing seemed like that of a gentleman of superior talents, retired from an eminent position. With an utterance somewhat grave, yet free and distinct, he spoke of his collegiate days at Edinburgh with his associate Bard. He spoke of the London schools of his earlier days with those of the present time; of his career as a clinical teacher; of John Hunter; the prospects of the American schools, etc. All that he said was delivered with a deep conviction of the sober trusts that had been confided to him, and with an emphatic and distinct articulation. Such was Dr. William Saunders, the author of one of our most popular text-books in my student's day; chronologically the *first* clinical instructor of London. As he had, during his long life and prominent situation, imparted knowledge to many of the men of our own land whose renown has reached you, I could not but give these reminiscences of him. The reflections which arise in contemplating this old teacher, the first who installed clinical science as a distinct branch of the profession, I must leave within your own bosoms. You, gentlemen, come here from remote parts, and I thought you would like to know something of the *personel* of Dr. Saunders.

It has been often said that the organization of an Italian opera, demanded a combination of talents which could be the result only of a union of artistic powers of the highest order, and that such a work gave assurance of the combined wisdom and genius of man superior to any other proofs of his emotional and reasoning faculties. By the lovers of the melodious strain and of expressive harmony, this encomium may be received as justifiable of the various emotions; yet I think I am warranted to affirm, from a long survey of humanity, that institutions, such as those to which our common labors are appropriated, are the very essence of that christianity we profess to recognize as a ruling power—the active principle of social relationship and of individual virtue: they concentrate, if I may be allowed so to express myself, the very marrow of the laws of Mount Sinai, and the doctrines of Him who came with healing on His wings. Can you tell me of a sublimer sight than that of Cheselden, whose name you must revere as among the illustrious in our profession, conducting in the closest bonds of friendship, the bard of all time the tuneful Pope, in his visitation through the Hospital to survey, as the proper study of man, the sickness

and the sorrows, the hopes and the triumphs of the Chelsea pensioners, under the treatment of that great master, whose skill, like the miracle of his Redeemer, poured eye-sight on the blind. Mozart and Rossini may have exalted our feelings to an immeasurable hight, and overwhelmed the tenderest sensibilities of the soul, and softened, by cadences, the roughest nature. Our glorious Cheselden challenges a still loftier recognition, and a future Reubens and Leonardo might find in his active life a befitting theme for their grandest conceptions.

But the circumstances of the hour forbid enlargement on the dignity and the graces which hospitals stamp upon the humanities of the age. We are now to glance a little more professionally at the subject. How much has medical and surgical science abroad been promoted by this organization! In our own country like evidence of their great utility is daily demonstrated. Our greatest physicians, as well as our greatest surgeons, have, with few exceptions, been schooled in such institutions; and the wholesome exhibition presented before us to-day of almost an army of young men watching the operations of the surgeon's knife and listening to his practical precepts, from his verbal disquisitions, furnish a contrast most cheering to the friends of science and humanity, compared with times gone by, when a Hunter and a Fordyce lectured to classes amounting to not more than a dozen or twenty hearers. Our Bellevue Hospital, added the speaker, embraces every appliance the student needs; ample room, diseases of every variety in nosological nomenclature, accidents of every species for surgical manipulation; all for the triumphs of clinical science, medical and chirurgical, such as few other institutions can boast, and surpassing in numbers almost every other establishment of a similar nature throughout our wide-spread republic. In making these observations, (added Dr. F.,) let us not forget the arduous labors and services of the distinguished men, our predecessors, who have toiled in this best of causes:—Drs. Isaac Wood, Benjamin Ogden, David M. Reese, and others, and let us remember, with gratitude, how, for years past, our present associates have devoted their time and talents in the furtherance of this great design. The reputation of New York in the domain of surgery stands on a broad foundation. Her Mott, her Stevens, her Post, her Kissam, are not to be overlooked, when the records of scientific surgery are unfolded for your contemplation. I hesitate not to say, concluded the speaker, that this present new and commodious arrangement for clinical knowledge will prove a permanent blessing to the afflicted poor and the helpless sufferer, as well as to your intellectual and professional distinction; and, I am thrice happy to add, that for the special assistance which has so happily brought to such an issue this worthy design, there is not one of you who will not speak in accents of gratitude and regard the name of our liberal and enlightened coöperator, Surgeon James R. Wood. Conflicting elements have yielded to his energetic action; discordant views have harmonized with his wiser deliberations; the constituted authorities have yielded to his benevolent requests, and the new edifice is now ready for your benefit. Gentlemen, I now have the pleasure of introducing to this assembly Dr. Valentine Mott, so long and so

widely known in both worlds as the unrivaled operator in surgery. Amidst great cheering, Professor Mott came forward.

Dr. Mott congratulated the large convention of students who filled the Hall, on the auspicious circumstances which marked the day; he spoke at some length of the value of clinical knowledge as the only basis of sound practice, both in medicine and surgery, and referred to the earlier period of his professional career, when, in 1810, he first projected, in Columbia College, a course of Clinical Surgery in New York. He had ever considered it the only safe and reliable method to make a sound and effective operator. Yet this surgery must, like every department of the art, be founded on anatomical knowledge, and this only could be obtained by the severest toil and devotion in the dissecting room. Days and nights, nay years, may be appropriated to the investigations which the scalpel unfolds, in order to render our surgical designs triumphant. With becoming deference he paid the tribute of the highest praise to his late associate in hospital and collegiate duties, Dr. Wright Post; his anatomy was his passport; on that he (Dr. P.) had built his far-famed renown as a surgeon. Professor Mott then added, I will now proceed, without further introduction, to give you, with the *cadaver* before me, the anatomy of hernia. The distinguished teacher then fulfilled his design, with an animation and an earnestness that convinced his audience that in his hands the art of teaching had not lost its skill after a devotion of fifty years, and that time had not impaired either his manual dexterity, or his descriptive powers.

Prof. Stevens, late President of the College of Physicians and Surgeons, so long known in the chirurgical world, was then introduced. He said he had little to add to the remarks which had been already offered on this most interesting occasion. He fully coincided in the enlarged views which had been presented at this meeting in behalf of the value of clinical knowledge, and congratulated the students upon the ample means now presented them to prosecute their studies in the most successful manner, to secure their laudable designs. He was aware how years had rolled on, how many efforts had been made, and how devoted had been his colleagues to secure the noble object with which they had at first set out. The work is now finished, and thanks to the unceasing efforts, in a great degree, of our friend, Dr. James R. Wood; and you, gentlemen, are to be the favored recipients of all these advantages. Let your devotion be as sincere as the efforts of our Medical Board have been praiseworthy. Our pride will be to behold you going forth to answer your responsible duties, appropriately disciplined in the learning of our science, and in an especial manner with that wisdom which clinical experience alone yields.

Prof. Willard Parker, upon invitation, addressed the meeting, with a conviction that at length the medical students could here resort with safety and with profit for clinical knowledge. We abound in great charities for the relief of the suffering poor, and for the treatment of their infirmities, physical and mental. Our New York Hospitals, said the Professor, challenges our highest regard as a noble charity, and as a great clinical school. He enumerated many others

of the large and commodious institutions with which our city abounds, as the Bloomingdale Asylum, the Emigrant Hospital, St. Luke's Hospital, all under a wise control for the interests of humanity, for the cure of disease, for the advancement of medical science, and to lessen in every way the ills to which "flesh is heir to." He detailed with much minuteness the various efforts which from time to time had been adopted to promote the advancement of the students of medicine and surgery, and he now congratulated them that the work was completed, and the end worthy of the labor. "Finis coronat opus." The several individuals who had promoted this good cause were passed in review before him; the Board of Governors, he was rejoiced to say, had tendered to them all that could be desired, and the Medical Board could not but, in return, offer them their grateful homage. In conclusion, said Dr. Parker, let us not overlook the fact, that for these blessings, for so I must call them, great as is our obligation to many, we, of all others that might be enumerated, are most indebted to Dr. Wood; he has never wearied nor ever tired in his charitable and beneficent design. The address of Dr. P. was of some length, and listened to with interest. Loud call was now made for Dr. Wood.

Dr. James R. Wood, so long a permanent surgeon of the Bellevue Hospital arose and thanked the audience for the tokens of approval for his services which they now so freely gave. He said he had for more than twenty years given much of his time, and his humble abilities to bring about the favorable result which they now had before them. No city of the Union presents so many opportunities for the promotion of the medical and surgical art, nowhere are there materials to build up a great practical school of scientific medicine, greater than in this city, nowhere has the student greater opportunities for practical study. I early saw that these advantages were within our reach, added Dr. W., and I am, while fully alive to the services of my colleagues, not backward in affirming that amidst great disheartenings at various times, I have always borne a cheerful spirit that the day would arrive when you, gentlemen, would be able to possess the advantages which we this day present for your acceptance. Dr. W. detailed many circumstances occurring during the past twenty years, connected with the modified plans of improvements which had been in part rejected and in part adopted, until with the concurrence and aid of the Board of Governors, the ample arrangement now effected had been permanently secured. I am most solicitous, added Dr. W., that these apartments shall also contain a museum of morbid anatomy, and I solicit that every member of our profession who may obtain such a specimen, will add it to our collection. Little time will elapse ere such a museum must become a treasure of inestimable importance. The laws of the state passed not long ago, under most judicious limitation, has made the fullest provision for the materials of our labors: an Hospital, that at a commmon average, finds accommodations for some six or seven thousand individuals, annually, afflicted with every variety of medical or surgical infirmity, it must be admitted, cannot but furnish a great field for the noblest humanity in the two-fold act of healing and instruction.

At the conclusion of his address, Dr. Wood announced to the students of the three medical colleges of this city that two premiums, one fifty dollars, and the other of twenty-five dollars would be awarded for the two best anatomical preparations, prepared and presented by them to the proposed Museum: the decision on the merits of the several preparations to be made by the respective surgical and anatomical professors of the Colleges, and a suitable testimonial to the successful competitors be given, signed by the awarders of the prize.

Dr. Wood sat down amidst the cheers of a gratified audience.

After some minor business was transacted the meeting adjourned.

Weekly Comparison of the Weather and Deaths in New York City during September and October 1856.

Weeks in 1856.	Week ending.	Mean temperature.	Evaporation below.	Mean daily ranges.	Days mostly clear.	Days of easterly wind.	Days of westerly wind	Rain Inches.	Mean hight barometer.	Mean weight, vapor in cubic foot of air.	Additional to saturate	Total number deaths.	Brain and nerv. syst.	Lungs and throat.	Digestive system.	Eruptive fevers.
		°	°	°					Inches.	Grs.	Grs.					
36th	Sept. 5	67	9	15	4½	4¾	2¼	½	30·00	3·23	3·34	505	86	95	212	30
37th	" 12	77⅓	9¼	21	4¼	1½	5½	1	30·16	5.21	5·11	476	75	82	198	23
38th	" 19	71	10	20	6	1⅛	6⅛	⅛	30·21	4·08	4·58	461	85	81	175	16
39th	" 26	59½	8⅜	23	5½	1⅜	5½	1⅜	30·17	3·21	3·00	431	74	80	153	14
40th	Oct. 3	61	8½	14	4	3½	3½	1¼	29·90	3·29	3·11	389	58	89	134	13
41st	" 10	64	10	23	5½	3	4½	⅛	30·13	3·21	3·79	355	59	96	98	19
42nd	" 17	54⅓	9½	17	5	5	2	⅓	30·08	3·34	1·91	370	77	87	99	21
43rd	" 24	56	11	13	4½	½	6½	0	30·00	2·35	3·15	366	70	90	92	30

Necrological Table continued.

Weeks in 1856.	Typhus fever.	Bilious & remit. fev.	Scarlatina.	Small-pox.	Diarrhœa & Dysent'y.	Cholera Infantum.	Marasmus.	Bronchitis.	Inflam. of lungs.	Consumption.	Congestion of brain.	Inflammat. of brain.	Convulsions.	Still born & premat'r.	Violent causes.	Children.	Under two years.	Foreign nativity.
36th	7	8	17	6	71	51	52	5	8	57	12	6	40	24	18	358	280	110
37th	10	8	11	5	41	63	46	3	8	42	10	8	31	32	18	328	237	101
38th	11	5	5	7	47	36	64	3	14	57	10	8	44	31	18	309	248	111
39th	9	10	4	7	33	31	47	3	9	45	8	6	27	36	13	287	243	106
40th	5	6	6	4	28	30	41	5	5	52	7	8	16	34	13	265	204	95
41st	8	7	9	3	15	7	39	3	13	50	3	6	26	35	11	215	165	119
42nd	6	8	10	5	22	6	35	4	11	45	4	10	30	28	18	223	166	113
43rd	7	6	11	9	26	11	32	6	9	41	6	9	20	35	11	229	180	93

There has been more fine weather than usual during the last two months, and the mortality and immigration bring about the same as for September and October last year, argues an uncommonly healthy state of the city.

OBITUARY.

Death of Dr. John Cochran.—Died, in Brooklyn, on the 15th of August, John Cochran, M.D., in the 30th year of his age. Dr. C. was born in Kellylane, Co. Derry, Ireland, on the 27th of July, 1826. After receiving a good classical education, he came to this country at the age of 14, and soon commenced the study of medicine with his uncle, Dr. Gilfillan, with whom he continued until he graduated in New York, at the College of Physicians and Surgeons, where he was a favorite student. He then entered upon the practice of his profession with his uncle in Brooklyn. His industry, talent, and tact, soon gave him an extensive practice. During the last eight or nine years he was one of the attending surgeons of the Brooklyn City Hospital. In this capacity he was actively engaged at the commencement of his last illness. Within the last two years he has had several attacks of hemaptysis, on account of which he spent the last Summer in Europe, and the last two Winters south. He returned to Brooklyn in May last, and feeling better he resumed, too zealously, his professional labors. He had another attack of hemaptysis, from which, however, he soon recovered, but being impelled by an ardent desire to excel in his profession, he returned again to its duties. In about a month thereafter he was taken with severe pain in his head, and a slow form of meningeal inflammation set in, which terminated his brief, but useful life.

He had many warm and admiring friends. He was kind, truthful, frank, and honorable, and he seemed to be one,

"On whom God's signet for a *man* was set."

Professionally he was quick in perception, unusually accurate in judgment, and resolute in action. He was a good physician, and a careful, steady, bold, and skillful surgeon. There are but few operations in surgery but that he has performed with more than ordinary success, either in hospital or private practice. There is no doubt but that he fell a victim to over exertion in his profession, which he loved, and to which he devoted his untiring energies. His loss will be deeply felt, not only by his friends and associates, but by the whole community, as was made abundantly evident by the vast multitudes that in sadness and sorrow attended his funeral—

"Vir insignis pietate—Requiescat in pace."

Death of Dr. Nathaniel Hutchison.—Died, at Boonville, Missouri, March 22nd, 1856, Dr. Nathaniel Hutchison, (father of Dr. J. C. Hutchison, of Brooklyn, N.Y.), aged 67 years. Dr. H. emigrated from Kentucky to Franklin, Mo., (then almost the only settlement west of St. Louis), in 1817, and commenced the practice of his profession, which, after a period of about 30 years, he was compelled to abandon, in consequence of impaired health induced by the labors of a practice extending over a district of from 50 to 75 miles square. His memory will long be cherished for his skill as a physician, his devout christian character, and his stern and uncompromising integrity.

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